



ASHRAE

Hawaii Chapter

HE EA MAKAMAE

A monthly publication by the American Society of Heating Refrigerating and Air Conditioning Engineers, Inc.

SY 2009-2010, Issue 6

Honolulu, Hawaii, February 2010

PRESIDENT'S MESSAGE

By **Albert Hahn**

Aloha ASHRAE Hawaii!

What an exciting month! I don't know about the rest of you, but I had the pleasure of experiencing my first Tsunami and living through it! I can't wait to exaggerate that story when my daughter grows up!

Besides the excitement created by the Tsunami, ASHRAE also is having a very busy month. We just completed our hot water heating seminar on the 26th of February and our refrigeration plant tour last night at the Ice Palace. ... and next week we will have our monthly meeting. Who says, "Engineers are dull!?!"

Hope to see you at D&Bs next Thursday. The first two rounds are on us!

Thank you for all your support!

Al

2009-10 Officers

President	Albert Hahn P.E.
President Elect	Dicson Aggabao
Vice President	Michael Chang
Secretary	Barry Jim On P.E.
Treasurer	Paul Fukunaga P.E.

2009-10 Board of Governors

Past President	Joseph Ting, P.E.
Member	Kevin Saito, P.E.
Member	William Lee, P.E.
Member	Paul Scott

2009-10 Committee Chairs

Attendance & Reception	Roland Suzuki
Chapter Tech Transfer	Joseph Ting P.E.
Chapter Program	William Lee P.E.
Refrigeration	Scott La Beau
Technology Awards	Kevin Saito P.E.
Historical/ Long Range Planning	Joseph Ting P.E.
Honors & Awards	Kenneth Richardson
Membership Promotion	Mofazzal Mir
Newsletter	Michael Chang
Student Activities	Paul Fukunaga P.E.
Research Promotion	Paul Scott
Young Engineers of ASHRAE	Alayna Shima
Government Affairs	Mark Yamamoto

March Monthly Meeting on Thursday, Mar. 11, 2009 - Dave and Busters – 6:00 p.m.

Do and Don't: **Data Center Heat Trends and Best Practices – Emerson / Liebert**

Main Program: **New Energy Codes For Hawaii – Howard Wiig - DBEDT**

RSVP: Roland Suzuki, Roland@heide-cook.com

Payment: \$35 member / \$40 non-member / \$45 at the door to ASHRAE Hawaii Chapter

P.O. Box 3916, Honolulu HI 96812 or via "PayPal" button at hawaii.ashraechapters.org.



MAIN PROGRAM

New Energy Codes for Hawaii

by **Howard Wiig**

This month's main program will feature Howard C. Wiig, Energy Analyst, Strategic Industries Division, State Department of Business Economic Development & Tourism (DBEDT).

Mr. Wiig will highlight the 2009/2010 activity within each County adopting statewide the International Code Council (ICC) "suite of codes." The said codes include the current issue of the International Energy Conservation Code (IECC).



The IECC subcommittee carefully reviewed the IECC-2006 and modified the mainland code to suit Hawaii's unique conditions. The differences between the "Hawaiianized" version of IECC 2006 and the current ASHRAE 90.1-1999 energy code will be described. The results of the recent ICC 2012 code hearings which will shape IECC-2012 will also be described.

Howard C. Wiig was born and raised in Honolulu. He completed his undergraduate studies at University of California Berkeley in 1964 and his graduate studies at University of Hawaii Manoa in 1968. He was a free lance journalist worldwide from 1960 thru 1968, while he was pursuing his undergraduate and graduate studies. He moved on to serve as legislative aide in the State of Hawaii Legislature from 1972-73 and as president of Pegasus from 1973-76. For the past three decades since 1976, he has devoted his public service as an energy analyst at the State's DBEDT. In the last 8 years, he also serves as Board Chairman for Lord & Trigg.

His professional areas of focus include Marine Debris Cleanup, Daylighting, Dark Skies, Lighting & Human Performance, Cool Roofs/Cool Attics, Commercial & Residential Energy Codes, Incentives for Efficiency Measures in Buildings. Some of his professional affiliations were as follows:

- President of Illuminating Engineering Society (Hawaii),
- Co-founder & President of Dark Skies International (Hawaii),
- President of DBEDT for Business Toastmasters Club.

Some of his publications include numerous articles on lighting efficiencies and building technologies in technical & trade publications. One of his professional awards include "Top 50 Innovations in American Government" presented by Harvard University, Kennedy School of Business.

DOs and DON'Ts

Data Center Heat Trends and Best Practices

Heat loads in Data Centers have been increasing over the last few years, and that trend is expected to continue, and most likely to escalate.

Implementing Best Practices in the data center is imperative to manage the higher heat loads of today's high density servers and improve the overall energy efficiency of the data center.

This will include traditional solutions, including traditional design precision air conditioning units, raised floor/perforated floor tiles and aisle configurations and containment.



David Toralez - is the West Region Sales Manager for Emerson Network Power /Liebert Cooling Business. David manages the western United States, including Alaska and Hawaii-Guam and the western Canada. David has over 20 years in the HVAC and Energy Industry with various positions. David received his BS

in Engineering from California Polytechnic State University – San Luis Obispo and his MBA in International Management and Marketing from University of La Verne. David lives and works in southern California.



ELECTIONS

By Joseph Ting

On behalf of the Nominating Committee, it is our privilege and honor to report the results of the nomination process.

Election Day will be on April 15, 2010.

The slate of Officers & members of BOG for SY 2010-11 are as follows:

OFFICERS:

- | | |
|---------------------|---------------------|
| 1. President: | Michael Chang |
| 2. President-elect: | Paul Scott |
| 3. Vice-President: | Kevin Saito, P.E. |
| 4. Secretary: | Barry Jim On, P.E. |
| 5. Treasurer: | Paul Fukunaga, P.E. |

BOARD OF GOVERNORS:

1. Albert Hahn, P.E., Immediate Past President
2. Blake Araki, P.E.
3. Donna Kishi
4. Melek Yalcintas, PhD, P.E.
5. Scott LaBeau
6. William Lee, P.E.



STUDENT ACTIVITIES – Paul Fukunaga, P.E.

By Paul Fukunaga, P.E.

On February 17, 2010, the Honolulu Community College (HCC) ASHRAE Student Chapter and students in the HCC air conditioning program visited Alaka'i Mechanical's fabrication shop. About twenty students and their advisor, Professor Derek Oshiro, observed state-of-the-art sheet metal fabrication machines that make Alaka'i one of the most efficient sheet metal fabricators in Hawaii. The student members were able to ask questions and received valuable information about the HVAC industry in Hawaii including jobs in construction and service. The tour was arranged by Mr. Ryan Ando, a project engineer with Alaka'i Mechanical. Several Alaka'i employees demonstrated the operation of the automated machines that are computer controlled from drawings to fabrication of the spiral and rectangular sheet metal ducts. Thanks to all the Alaka'i staff members who generously shared their time with the students.



2010 ASHRAE Winter Meeting - A Student's Perspective - I

By Alan Kotomori - University of Hawaii at Manoa Student Branch

This winter, I was able to attend the 2010 ASHRAE Winter Meeting held in Orlando, Florida. I attended several seminars and tours that help to further my experience in the HVAC industry. This meeting also gave me an opportunity to get together with my peers and familiarize myself with the leaders in the field.

The first event of the meeting was the plenary session. At this session, recognition and awards were given to those who had done outstanding work within ASHRAE. The keynote speaker at the plenary session was David Zach. Mr. Zach talked about things that we should expect to see in the near future. One thing that I found interesting and scary at the same time, was that according to Moore's Law (the number of transistors on an integrated circuit doubles about every two years) the processing power of computers will surpass that of a human in the not too distant future.

The next day, we attend the student breakfast. One of the valuable lessons learned at the breakfast was "about interviewing". I think that this lesson was very significant and will greatly help me with interviewing once I graduate. After the student breakfast, we attended two technical seminars. One was on heat pumps and the other was on advancement in AC & R sustainability. In the afternoon, we went on a technical tour at the Darden Headquarters. The Darden Headquarters is the newly built headquarters of various restaurants such as the Red Lobster and the Olive Garden. At the headquarters, we got to view the HVAC system. I thought that the HVAC system for this newly built building was very interesting. The interface was so user-friendly. It allowed the controller to easily see what was going on within the system. The last technical seminar we attended was one on Standard 189.1. After hearing what was expressed at the plenary session on high performance buildings, it aroused my curiosity to attend this seminar because of all the euphoric interest on the said standard brought about by Society president Gordon Holness.

After we attended the seminars, we went to the AHR Exposition at the Orange County Convention Center. At the expo, hundreds of companies were showing off their products that had just come out. While at the convention center, we attended another technical tour. We got to see the solar panels on the roof, which is providing 1 MW of electrical power and is currently known to provide the most power in the State of Florida. Also, at the convention center were three other experimental solar panel setups. I think that sites like the convention center are perfect application for using renewable energy. This is a major step toward lowering our reliance on fossil fuels.

My recent educational trip to Florida allows me to experience things that I could never learn in a textbook. Not only did I learn about the HVAC industry, but I also learned a lot about how to network with others including my own fellow classmates. I would like to thank all the companies that participated in our career fair for funding most of our trip expenses. I would also like to thank the University of Hawaii at Manoa Student Branch advisor, Professor Ting for giving me the opportunity to make the trip of a lifetime so significant that it changes my outlook in life.



2010 ASHRAE Winter Meeting - A Student's Perspective - II

By Brandon Spalla - University of Hawaii at Manoa Student Branch

A little more than half a year ago, I embarked on a journey through Professor Joseph Ting's Applied Thermal Engineering Course (a.k.a. Course 417) at the University of Hawaii at Manoa. While the semester's long course was challenging on many levels, the opportunities presented to the students allowed them to not only further the fundamental knowledge of HVAC but also preview different aspects of the HVAC industry and network with professionals. Becoming a student member of ASHRAE allowed me to meet professionals and fellow students in different parts of the industry at the ASHRAE Hawaii Chapter meetings as well as at the 2010 ASHRAE Winter Meeting in Orlando, Florida.

The theme of the Winter Meeting was centered on making the HVAC industry more environmentally responsible through the use of green technologies and new standards. Net-Zero Energy Buildings and ASHRAE Standard 189.1 (Standard for the Design of High Performance, Green Buildings) were two popular topics at the conference. I had the chance to attend several different seminars, one of which was Standard 189.1. Attending the Standard 189.1 seminar provided insight as to the topics contained within the standard such as guidelines during construction, what types of materials are permitted, and energy usage benchmarks.

During the seminar, the speakers outlined what the challenges were in adhering to Standard 189.1 when constructing the buildings their companies were working on. The buildings were both existing and new construction projects, which was interesting since older buildings required a more thorough treatment to check existing materials.

Another interesting aspect of the Winter Meeting was the technical tours. I attended tours for two very unique buildings, Darden Headquarters and the Orange County Convention Center. The Darden headquarters building, which was opened 5 months ago, features a very modern, efficient and employee-centric design. It houses the research and development for all the restaurant chains owned by the company. Additionally, this site also houses the servers for the cashiers in all the restaurants in the country. The servers are in a separate building from the main headquarters and can withstand a powerful hurricane. Backup power and HVAC are located near the building in the event of such a disaster. The server room is the only room at the headquarters that features an under the floor air distribution (UFAD) system which provides a more efficient cooling solution.

The Orange County Convention Center was also unique due the enormous size of the building. Heating and cooling the expo area, which is nearly 1 million square feet, requires over 100 air-handling units while events are being held. To offset some of the energy costs, the building managers have been exploring different solar technologies. They recently installed solar panels onto the expo roof, which allows them to offset their energy usages by as much as 15 percent. This is the type of innovation that will allow companies to move closer to achieving Net-Zero Energy buildings.

I really appreciate the ASHRAE Hawaii Chapter for providing me this opportunity to attend the ASHRAE Winter Meeting in Orlando, Florida. Attending the Winter Meeting was the greatest experience of my college career thus far. The seminars, technical tours and expo opened my eyes to the vastness of the HVAC industry and how many different companies that support the industry. Surely, without the support and encouragement from our mentor, Professor Joseph Ting, none of this would have been possible. Thank you for all you have done to enhance my future career in the HVAC industry, my journey has only just begun.



2010 ASHRAE Winter Meeting - A Student's Perspective- III

By Christopher Montpas - University of Hawaii at Manoa Student Branch

This past winter, I was fortunate enough to attend the 2010 ASHRAE Winter Conference. The conference allowed me the opportunity to visit various seminars, listen to a multitude of speakers, go on a couple of technical tours, and attend a vast expo. I was honored to be able to take part in this conference.

The seminars were very informative, as well as interesting. The first seminar we visited was about the energy and environmental implications of water to water heat pumps. The speaker, Scott Hutto, P.E., spoke about hybrid geothermal heat pumps. After going over the specifications he used on a pool heating application, he vaguely went over how they work. It became clear that this seminar was not specifically aimed to students wishing to enter the HVAC&R industry, but for veterans who have been in the field for a substantial time. However, this seminar was supposed to have two more speakers who, for some reason, did not show up, so it is possible that they could have gone into further depth on the same subject matter.

The next seminar we attended was titled "Advancement in AC&R Sustainability and Applications." The first speaker, Klaas Visser, spoke on the environmental impact of retrofitting carbon dioxide refrigeration. He basically stated that carbon dioxide has been used as a refrigerant since the 19th century, and with the current advances in technology, CO₂ would be more energy conservative than the current leading refrigerant material. The second speaker, Rainer Grosse-Kracht, spoke of the challenges and legal aspects of using such refrigerants. He said that due to the recent concern of global warming, there is much scrutiny surrounding the use of these refrigerants. According to him, R-134a has a higher efficiency than CO₂, but also a higher potential of causing global warning, and thus, neither refrigerant is ideal, suggesting a hybrid alternative.

The third speaker, Norbert Muller, suggested using water as a refrigerant, since it was not harmful and easily obtainable, with main problems being large size and cost. The final speaker, Yunho Hwang, spoke on developing a small, efficient and clean running system using CO₂ or ammonia. This seminar was much more informative than the first, since, with all of the speakers attending, it was possible to hear opposing views.

The final seminar we attended was on ASHRAE Standard 189.1, Site Sustainability. This seminar was mostly about the standard, which fits the overall theme of the conference on sustainability.

The technical tours were my favorite part of the conference. While the seminars were simply lectures, the tours were more practical in the field of HVAC&R engineering. The first tour was held at the Darden Restaurants executive building. First, we had a short background of the building and how they were trying to do their part for sustainability, and then we explored the vastness of the building, culminating with a face-to-face view of the cooling towers on the roof, which were larger than any cooling towers I've ever had the pleasure of seeing. The second tour was held at the Convention Center, where the expo was being held. Here, we were taken to the roof to see the controls and how they can be controlled from anywhere thanks to the convenience of the internet. However, I was most impressed by the solar panels that literally covered a majority of the external roof.

Finally, the expo, while a great place to network with companies from around the globe, was also a way to increase my knowledge of what opportunities are out there in the HVAC&R industry. It was slightly ironic, however, that it was at times uncomfortably hot in certain parts of the facilities, where the HVAC&R expo was held. It appeared that the system is not adequately designed for the load created by the tens of thousands of people in the HVAC&R industry that attended the event.

All in all, sustainability was the topic of interest at this conference, with the seminars and technical tours focusing a large portion on them. I would definitely recommend this experience to any student who is looking to a future in the HVAC&R industry, as well as anyone else who has been in it for a while and wishes to learn more.



2010 ASHRAE Winter Meeting - A Student's Perspective - IV

By Eric Garcia - University of Hawaii at Manoa Student Branch

The ASHRAE 2010 Winter Conference held in Orlando consisted of numerous seminars and tours. I was only able to take part in a small fraction of these but with this experience I take away with me a different perspective of the industry.

The seminars I attended included topics such as ASHRAE Standard 189.1 Part 1 Site Sustainability, Advancements in AC&R Sustainability in Building Applications, and Engineering & Environmental Implications of Water to Water Heat Pumps in Commercial & Industrial Applications Part 2. Each of these seminars had several scheduled speakers that provided in-depth knowledge of their respective topics. The seminar covering water to water heat pumps had only one speaker, who showed up out of the several that were scheduled to speak, thus I felt shortchanged for the said seminar, which I was enthusiastically interested. I have not had much exposure to the HVAC industry and had to take a step back to process the information being put out. I'm sure that if I would have worked in the HVAC industry, it would be much easier for me to decipher all the codes, standards and technical lingo expressed at the technical seminars.

The ASHRAE Winter Conference also gave me the opportunity to go on several tours to get an up-close perspective of buildings of interest. The tours included visits to the Darden Restaurants (Restaurant Support Center) and Orange County Convention Center. This Restaurant Support Center was built with sustainability in mind. Darden incorporates "green" practices by reusing water for irrigation, choosing a highly reflective roof system to reduce heat island effect, using a high-efficiency heating and air conditioning system and by designing an open workspace plan to maximize natural light. The center requires a total cooling load of 2,650 tons in order to keep the workspace comfortable for the building occupants. During off peak hours such as weekends, the 375 ton chiller is the only chiller that is in operation. The Restaurant Support Center was able to minimize the amount of lighting required by designing an open workspace plan. This design helps to reduce electrical cost for lighting but at the same time also lets in additional heat through windows that may not have otherwise been there. I participated also the tour of the Orange County Convention Center. The OCCC is the second largest convention facility in the country and includes the largest photovoltaic rooftop unit in the southeastern United States. The 1 MW photovoltaic rooftop unit is capable of generating 1300-megawatt hours of electricity per year and was a \$9 million project. The number of rooftop panels was quite a sight to see in person as pictures just can't capture the scale of the project. The Orange County Convention Center had a number of grants to help cover the high cost of the project; nearly half was paid for with grants. It seemed that the OCCC would have endeavored in such a project if the grants were not available.

The ASHRAE Winter Conference was an educational experience that allowed me to meet with professionals working in industry to gain invaluable insight as well as provided me with a an opportunity to further evaluate the choices available to me upon graduation. I am grateful that I had the opportunity to participate in such an event and will not soon forget what I have learned, thank you for granting me the opportunity.



2010 ASHRAE Winter Meeting - A Student's Perspective - V

By Jason Li - University of Hawaii at Manoa Student Branch

Hungry and sleepy, the delegation of students from University of Hawaii checked-in to their respective hotel rooms upon arrival in Orlando after 12 hours of flight from Honolulu. As first time ASHRAE students, we came to get a more in-depth look at the HVAC industry and were then quickly exposed to many people and technologies. I was able to see some of the complex issues such as minimizing impact to nature going as far as to suggest a new standard on certain buildings. I also had the opportunity to see the application of mechanical HVAC systems at the Darden Restaurants and the Orange County Convention Center.

During the plenary session, awards were given to winning students, who participated in the HVAC competition. A couple of deceased members were inducted into the ASHRAE Hall of

Fame, while others were awarded as ASHRAE Fellows for their many contributions. It was clear that without them ASHRAE may have different standards and ideals. There was also a keynote speaker who spoke of what the future might look like. He spoke of issues such as children being too involved in technology and not playing around getting bruises. He also mentioned that we may one day be able to "visualize" data and get information about anything around us at an instant. While personally I believe that many of his views are not unique, he spoke it in a way that would get most of us to listen. If that was his goal, then he succeeded.

During the next few days there were many informative session to choose from. Probably the most anticipated one was the new Standard 189.1. It focused on intended high-performance green buildings and how to select proper sites considering impacts to the surrounding. For example, the site must be developed with least 40% vegetation, porous pavers or permeable pavement. Seventy-five percent of the roof must comply with the criteria in Energy Star products and have the required Solar Reflectance Index. With these new standards in place it seems we are truly trying to change our destructive ways. At the end of this session, a speaker asked about the issue of rain water collection. It seems it would interfere with possible state laws prohibiting it since some areas use that water for irrigation. It appears that more work needs to be done. Nonetheless, it's great to see that people are trying.

The tour of the Darden Restaurants proved quite interesting as it was completed less than a year ago. This place turned out to be the headquarters of food chains such as Red Lobster and Olive Garden. They have six test kitchens which were about the only places not illuminated by sunlight. They've had some challenges since it opened such as the passing of a colleague followed by finding a suitable replacement. At one point, recipes that came out of Darden was causing the food to burn much too quickly in restaurants. The cause turned out to be the exhaust vents which were causing the pressure inside the kitchen to be much different than in the restaurants. In a small building off to the side is the data collection and security center which had its own generator. This is also where the site's three chillers and one massive cooling tower are kept. At the time when we visited, only the smallest of the three chillers, the 360 tons chiller was in operation.

I also participated at a tour of Orange County Convention Center. The main attraction of the tour was the 1000+ solar panels that are installed on the roof. The energy generated covered at least 15% of the electric utility at peak times. They had over 100 AHUs which were turned on one at a time to avoid the energy spike although they don't normally use them all.

I am grateful for being allowed this opportunity to not only learn things one wouldn't get in a classroom, but to also see the vastness of the HVAC industry and the enormous amount of people involved in this industry. It would not have been possible without the guidance of our Professor Joseph Ting and all our ASHRAE members working together.



2010 ASHRAE Winter Meeting - A Student's Perspective - VI

By Matthew Tio - University of Hawaii at Manoa Student Branch

The 2010 ASHRAE winter conference held in Orlando, Florida was a great opportunity for the participating UHM students, as we were introduced to the vastness of the HVAC&R industry. It was memorable from the technical seminars to the guided tours.... an eye opening experience that we will never forget. Although most of our experiences were pleasant, nevertheless, there were a few incidents, which we were not treated appropriately by the exhibitors at the ARI exposition. Some of the exhibitors were inconsiderate people, who treated us differently, because we were ASHRAE student members. However, these incidents did not detract from our experience but added to it, nor did it put a damper on our attitudes, as it was one of the greatest adventures we have ever been on.

The seminars were great places for people to gain understanding on different aspects of the HVAC&R industry. The seminars I attended included the ASHRAE Standard 189.1, water-to-water heat pump use, and the advancement in HVAC&R. The seminars broadened my view on many things. The Standard 189.1 is a standard that will help shift the HVAC&R industry more towards going green. This standard is a huge step towards making the HVAC&R industry and the construction industry a more eco-friendly one. We have come to learn that water-to-water heat pumps work effectively in commercial applications. Three hybrid geothermal heat pumps were used in a hotel. Aside from cooling, the heat pumps were used to heat four swimming pools. The vertical bore piping was 225-250 ft underground, while the fluid coolers were located on the roof of the hotel.

Many things can be learned at these seminars. Nonetheless, it appeared that some of the seminars requires in-depth knowledge on the subject matter in order to comprehend fully what the speakers were talking about. Even though ASHRAE encourages young engineers to partake in these seminars, most of the seminars were catered more to people, who are already in the industry or people who know a great deal about the HVAC&R industry. If not for the basic understanding of the HVAC&R we learned at UHM, I am afraid I would not have learned anything from the seminars. The speakers talked too fast in most of the sessions we attended. At the water-to-water heat pumps seminar, it was disappointing to know that only one of the speakers did show up to provide his talk.

The technical tours in my opinion were the highlight of the whole conference. Being able to tour Darden and to be shown around one of the most successful business in the food industry was amazing. The building design was very innovative and they were trying for a LEED silver certification. Their data center was primarily cooled by the main buildings AC system, but was provided with a dedicated system in case there would be a power failure. Our second tour was the Orange County Convention Center. We found out that the building produced more power than consumed through photovoltaic cells that cover the roof. The entire energy system should pay back within eleven (11) years, but should last for thirty (30) years. However, the enormous cooling load to produce the chilled water for the building usage would cost more than the power generated by the photovoltaic cells.

The exposition itself was a huge affair. It took us two days and we still were not able to visit each and every booth. The products and their advanced technologies were fascinating. It's interesting to know the creativities of some exhibitors, who used exceptional methods in to attract fellow expo attendees.... from booths with attractive women to booths giving out free beer & hotdogs.... we were attracted to all of the booths regardless of what type of advertisements they provide.

Most of the booths handed out information about their products like they were candy on Halloween Day. However, we felt that we were treated as second class citizens by some of the exhibitors because we were only students. As I recalled, one of the exhibitors did not even have the eye contact with us when he was talking to us. The whole time he was talking, he was looking around at other people even when we asked him questions. The answers to those questions were no better as they were all short and incomplete. The worst part about this man was that before we were done asking questions, he handed us a business card, and told us to give it to our professor.

He pretty much shooed us away and engaged with a couple of other people who came by the booth. Putting that particular experience aside, we learned all sorts of things about pumps, belts, fans, chillers, plastic cooling towers, the tools used in the HVAC&R industry, and even software to help the service department become more efficient. It was a very interesting event that had our minds reeling and our feet tired by the end of the day.

I believe this was one of the best experiences I have ever had, and I would like to thank Professor Ting, the ASHRAE Hawaii chapter, and the Hawaii HVAC&R community for the opportunity provided to all of us, who participated at the 2010 ASHRAE Winter Meeting & ARI Expositions in Orlando.



2010 ASHRAE Winter Meeting - A Student's Perspective - VII

By William Duck - University of Hawaii at Manoa Student Branch

Late last January, seven members of the ASHRAE UHM Student Branch attended the 2010 ASHRAE Winter Conference in Orlando, Florida. It was a great experience participating a number of technical seminars, technical tours, and even an exposition with hundreds of the nation's top HVAC&R leaders in attendance.

My favorite part of the conference was the technical tours. For our first tour, we visited the headquarters of Darden Restaurants. Darden Restaurants owns many popular restaurant chains including Red Lobster and Olive Garden. What is interesting is that they do not franchise any of their restaurants and nearly every restaurant location is corporately owned. A separate building houses their servers and 24/7 support center.

The servers must be running at all times in order for the cash registers at all 1600+ restaurants across the nation to operate. Due to the importance of this building, it is essentially built like a bunker. The impression I got from the facilities was that Darden Restaurants is very focused on employee satisfaction. Their headquarters included large, open meeting spaces, a dry-cleaner, a gym, and a cafeteria with free Coca-Cola drinks. It definitely seems like it would be a good place to work.

The next technical tour we went was at the Orange County Convention Center mechanical room and roof. This was also an eye-opening tour. The a/c system we looked at had to cool over 1,000,000 square feet of floor space. In order to achieve this, they utilized over 100 air handling units (AHUs). One interesting fact they shared with us is that they used supplied chilled water for their AHUs. Before they knew any better, they would turn on all AHUs at the same time and run up a massive chilled water bill in the hundreds-of-thousands of dollars. They later realized that they could only turn on a couple of AHUs at a time until they were all on to reduce water consumption. The main attraction of the facility was the massive array of solar panels on the roof capable of generating over 1 MW of power.



ASHRAE ACTIONS

By ASHRAE.ORG

Standard 189.1 Published

A new standard for the design of high-performance green buildings could revolutionize the building industry. ANSI/ASHRAE/USGBC/IES Standard 189.1, *Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings*, is the first code-intended commercial green building standard in the United States.

The standard, published Jan. 22, provides a long-needed green building foundation for those who strive to design, build and operate green buildings. From site location to energy use to recycling, this standard will set the foundation for green buildings through its adoption into local codes. It covers topics including site sustainability, water use efficiency, energy efficiency, indoor environmental quality and the building's impact on the atmosphere, materials and resources.

Water Use Highlights

- Site Water Use Bio-diverse plantings, hydrozoning, & smart irrigation controllers
- Building Water Use
 - Plumbing fixtures & fittings, appliances, HVAC systems & equipment, generally 40% lower than U.S. EPA Act 1992
 - Cooling tower maximum cycles of concentration
- Water Measurement for building and subsystems

Energy Efficiency Highlights

- More energy efficient than Standard 90.1-2007
- Renewable energy provisions
- Energy measurement for verification
- Electric peak load reduction

Indoor Environmental Quality Highlights

- Indoor Air Quality
 - Ventilation rates per ASHRAE Standard 62.1
 - Outdoor air flow rate monitoring of minimum outside air
 - MERV 8 filter (MERV 13 in PM2.5 non-attainment areas)
 - No smoking inside building
 - Source contaminant control
- Daylighting
- Acoustical Control

Construction and Operation Highlights

- Acceptance Testing / Commissioning
- IAQ Construction Management Plan
- Plans for Operation
 - High-performance building operation
 - Maintenance
 - Service life
 - Transportation management

<http://www.ashrae.org/publications/page/927>



EMPLOYMENT OPPORTUNITY

CHELSEA GROUP

Title: Director of Operations

Functions:

- Assess, benchmark, and track Key Performance Indicators (KPI) on a portfolio of commercial properties, including energy use and cost, other resource use and cost, maintenance and operations cost and quality
- Oversee one or more building engineering contractors in their delivery of services within the portfolio of properties to optimize value of their services
- Develop, plan, and support ownership review processes for capital improvement programs that address enhancements of KPI and optimize asset value of the subject properties, including energy and other resource audits and obtaining rebates, grants, and tax credits

Reporting: Will report to asset manager and to owner's oversight team

Qualifications:

- Engineering degree preferred or well documented training and education providing equivalency
- At least five years of building operations experience, preferably including supervisory roles, or equivalent practical experience
- Demonstrated ability to devise, document, and articulate capital plans for a building

Compensation: Commensurate to skills and experience, competitive benefits package

Contact: Chief Administrative Officer
Chelsea Group, Ltd
PO Box 68
Maunaloa, HI 96770
pturner@chelsea-grp.com



MEETINGS OF INTEREST



Rebuild Hawaii Consortium Agenda

Quarterly Meeting—March 10, 2010
Hawaii Convention Center, Emalani Room 320
1801 Kalakaua Ave., Honolulu, Hawaii

7:30 a.m.	Networking and Partnering Opportunities	
8:15 a.m.	Welcome and Opening Remarks	Kevin Saito President
8:30 a.m.	Election of Officers	
	Kevin’s Farewell, “Passing the Baton”	
8:45 a.m.	Introduction of new affiliates	
	Clean Light Green Light	Kia Kamaau
	High Tech Lights	David Mitchell
	Hawaii Interfaith Power & Light	Rob Kinslow, Executive Coordinator
	Sponsor message	Dennis Wong, Hawaii National Bank
9:15 a.m.	Hawaii National Marine Renewable Energy Center	Luis Vega HNEI
9:30 a.m.	Break	
10:00 a.m.	The Path to Zero Energy Homes	Paul Norton, NREL
10:30 a.m.	PACE (Property Assessed Clean Energy) Solar Financing	Robert Harris, Sierra Club
11:00 a.m.	Behavioral Change and Energy Conservation	Manfred Zapka, Phyllis Horner
11:30 a.m.	IICEI Initiatives and Smart Grid Project	Ross Roley, PACOM
Noon	Lead by Example	Carilyn Shon, Jon Chin
12:30 p.m.	Announcements—and closing	

Our next Consortium meeting will be June 2, 2010

*The Rebuild Hawaii Consortium shares information about new products, practices, and services,
but does not promote or endorse products or vendors.*

Visit our website <http://hawaii.gov/dbedt/info/energy/efficiency/RebuildHawaiiConsortium>

