



January 6, 2011: Vol. 54, No. 05

Produced by: Daniel C. Merkel  
Chapter Newsletter Editor/ Chairman

*The Therm*, is a monthly Newsletter for chapter members and HVAC&R professionals alike, that provides information about the Fort Worth Chapter of ASHRAE.

Next Chapter Meeting

Data Center Design

January 18, 2011  
11:30 A.M.

Carter::Burgess Plaza  
777 Main St.  
26th Floor  
Fort Worth, TX

[Click here for map.](#)

## President's Message



Happy New Year! I hope everyone had a happy and healthy holiday season and is ready to continue the momentum we started with ASHRAE during the last few months of 2011. Thanks to everyone that attended our last meeting in November. This was an enormously successful joint meeting with BOMA. It was so successful that we doubled our pre-registration numbers. Sorry if this caused a problem to any of you. Please look for meeting invites in your email and RSVP whenever possible; it really helps.

Though we did not have a meeting last month, the Board of Governors did meet and continued to lay out plans for this year. We continue to have some exciting programs and activities planned. Look for information in this newsletter regarding this month's meeting presentation on Data Centers. This is a hot topic for our industry as we see another push to cloud storage and cloud computing. Please join us!

As 2011 drew to a close, our local job market saw growth in private, industrial, and some federal projects all trying to allocate money before deadlines passed. It kept some of us pretty busy, and hopefully means continued activity through the beginning of this year. Keep a close eye on schools and universities in our area.

In Fort Worth ASHRAE business, our number of delinquencies has dropped to 22. This is great progress from our last issue. Please check with us at the next meeting (or online at [www.ashrae.org](http://www.ashrae.org)) if you are not sure if you are up-to-date with your membership.

This month, we will be meeting on the 40th floor of Carter::Burgess Plaza. See you there!

Sincerely,  
Richard Watters  
Chapter President

## January Program

**Date:** January 18, 2012

**Time:** 11:30 a.m. – 1:00 p.m.

**Location:** Carter Burgess Plaza – 26<sup>th</sup> Floor

**Meeting Topic:** Data Center Design

### Speaker Info.

Mark Hendrix

Engineering Manager at CommScope, who has played a role in virtually all the world's best communication networks – wired and wireless.

### Speaker Bio

Mr. Hendrix received a B.S. in Mechanical Engineering from Clemson University and a M.S. in Mechanical Engineering from Southern Methodist University. He holds seven patents and has been actively involved in managing data center design and innovation for almost 30 years. He is the architect of next generation wireless network systems and had developed industry leading PUE modular data center cooling and power systems. He also has experience in lifecycle processes, operations, and DFX quality practices.

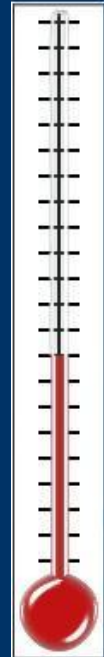
Mr. Hendrix's specialties include:

- Creative design solutions (7 patents)
- Wireless network system level design
- Modular data center high efficiency cooling and power design
- FEA thermal / structural analysis
- Pro/Engineer CAD solid modeling
- Design-to-Cost, DFM, DFA techniques
- Physical design of complex electrical, optical systems
- Product Lifecycle and Project Management experience
- Compliance agency approvals (UL, ETSI, CE, NEBS)

### Presentation Outline

Data Center design and optimization.

RP Dollars



8,362

[CLICK HERE TO  
CONTRIBUTE!](#)

# Board of Governors Meeting Minutes – November 9, 2011

## Call to Order – 10:55am

Attendance: Richard Watters, Larry Akers, Patty Parrish, Daniel Merkel, Tony Finch, Cody Pace, Sean Rath, Ian Bost, Jay Sullivan, Art Geisler, Nick Schroeder, and Saul Martinez.

## President's Award of Excellence (PAOE) Update

	<u>Par</u>	<u>Last Year</u>	<u>YTD</u>	<u>Goal</u>
○ Membership Promotion:	800	2350	0	1450
○ Student Activities:	500	2316	160	1585
○ Research Promotion:	1050	1650	215	3015
○ Historical Reporting:	300	375	150	600
○ Chapter Operations:	600	1865	760	1980
○ Chapter Technology Transfer:	850	1675	375	1950
TOTALS	4,100	10,231	1,660	10,580

## Officer Reports

### *President-Elect (Merkel)*

- Update: Nominating Committee
- The PDF version of the Therm on the website has the PDF link at the top

### *Secretary (Finch)*

- Update: Hand written version of the Roster is complete and ready for final edits.
- Update: "New Faces of Engineering" Nomination – Nick Schroeder will discuss with Tony today.

### *Treasurer (Sullivan)*

- Update: "Unclaimed" checks for past Student Scholarships – charged off of our ledger?
  - We are waiting on...?
- Update: Invoicing local member who are not paying local dues
  - We have not yet identified these members
- Update: Invoice dual members
  - We have not yet identified these members
- Update: Roster Sponsorship Invoicing – This is done.
- Update: Golf Tournament Accounting
  - We made \$190 on the raffle and we're still waiting on the final invoice from Great Southwest.
- Will issue a reprint of the revised August Treasurer's Report.

### *BOG At-Large (Bost, Ellis, Parish)*

## Committee Chairman Reports

### *CTTC (Upham)*

- January Meeting Location – Trying to confirm meeting on 26<sup>th</sup> floor

### *Historian (Parrish)*

- Recall Interviews – Patty will get with Sid Ellis this month.

### *Honors & Awards (Akers)*

- Possible nominations for Fellow, DSA, Exceptional Service Award
  - Next year we can turn in Jay Martin and Sid Ellis for Chapter Service Award.
  - We will also re-submit John Rhodes for DSA this year
  - Dr. Bittle will be submitted as a Fellow.
  - Emil Faiberg as Exceptional SA – Still looking for more records.

### *Membership Promotion (Olivo)*

- Delinquencies are **39/311 (12.5%)**, which is down from last month. Need to improve. Most of these people have been members for over 5 years – Richard will help Tyson
- We have one new member: **Danny Swaim**
- We have one new student member: **Matthew Youngblood**

### *Refrigeration (Martin)*

- Meeting topics with CTTC
- Tours

### *Research Promotion (Bost)*

- Funds raised to date – Will get PAOE points before 12/15

### *Special Events (Rath)*

- Update: Holiday Party – No date yet.
- Update: January “Back to School” event for UTA and TCU – Let Nick and Saul report
- Update: Membership Promotion Event – Will tie into a GBM, Feb 2012 maybe.
- Update: First Social Event of the year – When and where is the Happy Hour?
  - Date is 11/30 at the Pour House in Fort Worth.

### *Student Activities (Schroeder)*

- Many UTA Students will attend today’s meeting. Nick has student applications to sign them up. We will pay to renew the students from last year.

### *Webmaster (Pace)*

- Update: Website / Forum – All web updates will be done soon.
- Area on website for job postings?
  - Will set rates based on last time – will check records.

### *YEA (Martinez)*

- Update: Any new updates of Mentoring Program
  - Will put together mail merge before the end of the month.

## **Old Business**

- Roster to be issued **last** month
  - Will be done and emailed before the end of this month
- CRC Committee
- Technical Article for the Therm or the Website (EVERYONE)

## **New Business**

- Area on the website and in the Therm for posting job listings
- Meeting with the ESL at TAMU – Lab Director, Dr. Claridge

## Board of Governors Meeting Minutes – November 9, 2011 (cont.)

### Closing – 11:21am

- No meeting next month!
- Will email date and time for BOG next month.

## General Business Meeting Minutes – November 9, 2011

### Call to Order – Self introductions

### Old Business

- Delinquencies – currently 12.5% of our membership is delinquent on dues (39/311). This is down from last month, but we picked up 6 newly delinquent at the end of October. Please check your membership status with Tony on the way out. If you are not receiving the newsletters, that may mean that your membership has lapsed and Society has removed you from our roster.

### New Business

- Approve Meeting Minutes for last month – Dan Merkel motioned to 2<sup>nd</sup>.
- One new member this past month – WELCOME to Danny Swaim with Texas Air Systems.
- One new Student Member: WELCOME to Matthew Youngblood.
- We are excited to have some of our student members in attendance from UTA:
  - Jahed Ahmed
  - Omar Rosales
  - Benjamin Engstrom
  - John Fernandes
  - Marianna Vallejo
  - Naveen Kannan
- **ALI Seminar at UTA on Nov 16<sup>th</sup>, NEXT WEEK**
  - **3-hour seminar on Healthcare Facilities: Best Practices Applications**
  - **Conducted by Robert Cox and Dan Koenigshofer**
  - **8am – 11am at UTA Nedderman Hall, Rm 100**
  - **\$100**
  - **Handouts will be provided, along with coffee and donuts**
  - **CEUs will be provided**
- We will not be having a meeting in December. We will meet again on the third Wednesday of January, and we will be on the 26<sup>th</sup> Floor of Carter::Burgess Plaza.

### BOMA

- We are excited to be meeting with BOMA again!
- Kathy Leming

### Program

- Have Clif Upham introduce speaker

### Closing

- Reminder – No meeting next month! Happy Holidays!
- We will see you in this building at the usual time in January.
- Please fill out those speaker evaluation forms.
- Meeting adjourned at 1:21pm

## Treasurer's Report – Jay Sullivan

STARTING BALANCE DATE 11/1/2011  
 NEW BALANCE DATE 11/30/2011

### Treasurer's Report

Jay Sullivan

#### Financial Data:

Starting Balance (11/1/11): \$ 5,549.09

#### Deposits:

Check #055696 - MJEC Isaac Henson Golf Team Payment	\$ 450.00
Check #14372 - MJ Air Golf Team Payment - Hudachko	\$ 400.00
Check #50874 - Freer Golf Hole Sponsorship	\$ 150.00
Check #20107 - Enviromatic Systems Golf Hole Sponsorship	\$ 150.00
Check #1861 - Patty Parish Belimo Golf Hole Sponsorship	\$ 150.00
Check #5719 - Harold James Inc Golf Team and Hole Sponsorship	\$ 600.00
Check #10984 - PCI Industries Golf Team Payment - Michael Smith Team	\$ 400.00
Check #85039 - AC Supply Co Golf Team Payment - Fulton	\$ 600.00
Check #20022 - Enviromatic Systems Roster Business Card Sponsorship	\$ 50.00
Check #116681 - Baird Hampton Brown Past Presidents Night Sponsorship	\$ 300.00
Check #6389902 - Jacobs October Lunch Payment	\$ 125.00
Check #6389903 - Jacobs September Lunch Payment	\$ 400.00
Cash for Mulligans	\$ 50.00
Check #2074 - Victaulic golf team sponsorship - Olivo	\$ 200.00
Check #1036 - Todd Bennett - Lennox Golf Team	\$ 450.00
Check #2940 - JD Higgins Golf Team	\$ 440.00
Check #2276 - Victaulic Golf Team - Olivo	\$ 250.00
Check #1570 - Siemens Golf Team - Rutledge	\$ 400.00
Check #1464 - Engineered Air Golf Team - Upham	\$ 600.00
Check # 200 - Trane Golf Team - Baierski	\$ 600.00
Check #1049 - Texas Air Golf Team - Brunkenhoefer	\$ 400.00
Check #116841 - BHB Hole Sponsorship	\$ 150.00
Check #1358 - HTS Golf Team - Bartek	\$ 600.00
Check #55883 - MJEC Table Sponsorship	\$ 250.00
Check #42933 - Eventbrite Payment for Golf Tournament	\$ 3,125.00
November Lunch Deposit	\$ 1,165.00
Check #52732 - National Chapter Check for local dues	\$ 385.00
Deposit ALI Course Money	\$ 900.00

**Subtotal: \$ 13,740.00**

#### Payments:

Check # xxxxx - Payment to Ian Bost for Golf Tournament Expenses	\$ 87.80
Check #5164 - Petroleum Club - October Parking	\$ 152.50
Check #5163 - Petroleum Club November Lunch Payment	\$ 1,548.70
Check #5165 - Matt Carter - Reimbursement for Golf Tournament Expenses	\$ 841.03

**Subtotal: \$ 2,630.03**

**New Balance as of 11/30/11:**

**\$ 16,659.06**

Golf Tournament  
Expenses

Golf Tournament  
Income

## Special Events Report – Sean Rath

The fall golf tournament was held on November 7<sup>th</sup>. We had good weather, a great turnout and lots of fun. The proceeds will benefit ASHRAE research.

The first ASHRAE Happy Hour was held on November 30<sup>th</sup> at the Pour House. We had a lively crowd, and it was a great opportunity to socialize with colleagues.

The winter party is in the early planning stages for January – more information to follow in the coming weeks.

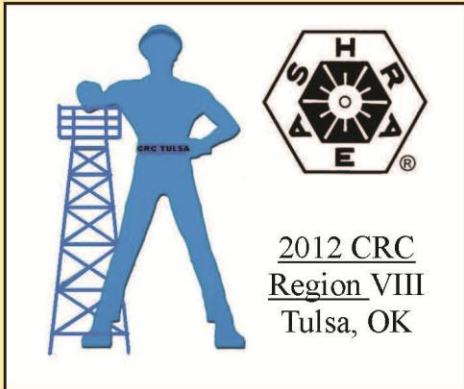
Thanks,  
Sean

## Sid Ellis – Recall Interview

Sid Ellis was born in Brownwood, Texas and lived there for a few years until his family moved to Cleburne. He graduated from Cleburne High School. From the age of 14, he worked with his dad at the family owned business of Ellis Air Conditioning until he turned 18. With his job experience in mechanical and electrical field at an early age he then went to work for Chaparral Steel as a millwright apprentice. After working in the steel industry, he soon learned that air conditioning was a better path to success. He was hired by Harold James from 1988 to 1998 and attended the Local Union Apprenticeship Program. In 1992, he was named Apprentice of the Year for the State of Texas. In 1996, he joined ASHRAE and discovered the world of networking. In 1998, he started the Fort Worth office of Enviromatic Systems and the company grew significantly in just a few years. He had found his niche. Within a short period of time the Fort Worth and Dallas offices merged and moved to a new facility in Grand Prairie.

He traveled through the chairs on the Fort Worth Chapter of ASHRAE and took the challenge as President from 2006-2007. Then he served on the Board of Governors the year after and again this year. He is always more than willing to help anyone in the chapter and has served as a great leader, business guru, mentor, and all-around great friend in this industry. He feels the highlight of his ASHRAE past was the year he worked on the Research Committee. As Research Committee chairman he was able to achieve over \$34K for the year. He has one recommendation to the young members getting involved in ASHRAE today. Get involved by meeting and learning from other chapter members. Absorb the knowledge of chapter and the industry as a whole for 10 years and then make the commitment to serve as an officer for the chapter. You will gain so much in a short period of time. His only suggestion for improvement of the chapter would be getting some of the older members back involved at some of the social events. He credits his success to a lot of old guys in ASHRAE that believed in him.





2012 ASHRAE  
Region VIII CRC  
April 26th—28th, 2012  
Tulsa, Oklahoma  
DoubleTree @ Warren Place

The NEOK Chapter is looking forward to hosting the Region VIII CRC in 2012. It will be April 26th –28th at the beautiful suburban DoubleTree @ Warren Place.

Registration website will open in January. So watch your inbox and chapter newsletter for more information.

In addition to the regional training and business sessions, we have planned some great Technical Sessions for Friday afternoon.

- 2:00 PM Speaker: David Farthing**  
Adjunct Professor at Oklahoma State University  
**Topic: Controlling NO<sub>x</sub> Emissions from Boilers**
- 3:30 PM Speaker: Dave Knebel,**  
Vice-President of Sales and Technology at AAON, Inc.  
**Topic: Single Zone VAV Systems**

PDH's will be provided



## Message from ASHRAE President Ron Jarnagin

As has been discussed at previous CTTC meetings, the National Council of Examiners for Engineering and Surveying (NCEES) has created a model law for adoption in 2020 in the U.S. If adopted by state licensing bodies, the law will require that all seeking professional engineer licensure for the first time hold a master's degree.

This is in direct conflict with the ASHRAE Board resolution (attached). Additional information is available at <http://www.licensingthatworks.org/>.

I am seeking assistance from chapter and regional leadership to be prepared to work with your U.S. ASHRAE chapters to discourage adoption of the model law.

Although no state has yet adopted the model law, we are aware that there is discussion in a limited number of states to do so. We need assistance from all the chapters in the U.S. to identify states that may be considering adoption of the model law and that the local ASHRAE chapter then communicate with their state board members.

We will be sending more information soon.

Thank you for your continuing service to ASHRAE and our profession.

Sincerely,  
Ronald E. Jarnagin  
2011-12 ASHRAE President

## ASHRAE Technology Awards Highlight Outstanding Building Projects

Designers of systems for a university building, a cancer center, an ice rink and other commercial building are recognized by ASHRAE for incorporating elements of innovative building design.

The ASHRAE Technology Awards recognize outstanding achievements by members who have successfully applied innovative building design. Their designs incorporate ASHRAE standards for effective energy management and indoor air quality. The awards communicate innovative systems design to other ASHRAE members and highlight technological achievements of ASHRAE to others around the world. Winning projects are selected from entries earning regional awards.

“Every year, the judging panel looks forward to the reviewing the outstanding projects submitting by our membership,” Nathan Hart, chair of the judging panel said. “Being a consulting engineer myself, I appreciate the effort involved in submitting an entry to Society-level competition. I enjoy seeing what fellow ASHRAE members are doing to strive for more energy efficient, well ventilated maintenance friendly building designs. Many of the entries this year incorporated innovations and technologies that took advantage of their specific geographical locations to provide more energy efficient systems—helping to highlight that one size does not fit all and that a more energy efficient design solution may be available when considering the project as a whole.”

Following are summaries of the winning projects.

### Mountain Equipment Co-op

Roland Charneau, P.Eng., ASHRAE Fellow, ASHRAE Certified Healthcare Facility Design Professional, Pageau Morel & Associates, Montreal, Quebec, Canada, receives first place in the new commercial buildings category for the Mountain Equipment Co-op store, Longueuil, Quebec, Canada. The building is owned by the Mountain Equipment Co-op.

## ASHRAE Technology Awards Highlight Outstanding Building Projects (cont.)

The Mountain Equipment Co-op store, a 2,600 sq. ft. single story retail sporting goods outlet, was designed and built so as to have a minimal impact on the environment. Traditionally, artificial lighting contributes to a large part of the total energy consumption in commercial retail stores. It was thus decided to maximize day lighting through a series of clerestory with a saw tooth shape roof. Also, light sensors were integrated in the design to partially or completely shut down the artificial lighting when natural lighting is sufficient. Occupancy sensors were integrated in small spaces to completely shut off lighting when not in use.

Optimization of the envelope resulted in an envelope insulated near twice the recommendations of the Model National Energy Code for Buildings, thus reducing the overall energy needs for the building. Structural Insulated Panels (SIP) were used for their efficiency, tightness and minimal construction time. Energy simulations showed a measured annual energy saving of 54 percent and cost savings of 57 percent.

Taking into consideration new, unpacked products that retail stores carry—which bring pollutants into the occupied zone—and racking which impedes good air distribution if supplied from the ceiling, air is supplied via underground air distribution with displacement ventilation diffusers at floor level. Additionally, the building utilizes active solid thermal energy storage in its concrete slab; an underground cistern to collect rain water and to feed the water closet, as well as waterless urinals; and natural/hybrid ventilation with leeward vents at roof level, to name just a few innovations. Overall, the new store consumes 57 percent less than the recommendations provided by the Canadian Energy Model Code.

### IKEA Brossard Distribution Center

Ken Sonmor, Ecovision Consulting, Montreal, Quebec, Canada, receives first place in the existing commercial buildings category for the IKEA Brossard Distribution Center, Quebec, Canada. The building is owned by the IKEA Distribution Services, CA LP.

The extensive distribution center (79,750 sq. m.) belonging to one of the largest furniture retailers in the world consists of a warehouse, where goods are received, stored and then shipped, along with adjoining office spaces.

On the lighting front, nearly 700 T12 high output (HO) lighting fixtures were replaced with a combination of T8 and T5 HO lights. An additional 510 high-intensity discharge fixtures were replaced with T5 HOs fixtures with custom made reflectors to bring the light where needed. Motion sensors were installed throughout the entire facility shedding 250kW of lighting power. Luminosity sensors near windows in the office areas turn off lighting when not required thus harvesting daylight.

A 160T geothermal system is now the principal source of heat for the building. To attain the greatest possible efficiency, a dual maglev frictionless compressor heat pump was chosen. A greater number of wells than average maintain a very close approach with the ground temperature of 50 F. This higher temperature permits the reduction of glycol concentration which benefits the efficiency of the heat pump, the heat transfer through the vertical geothermal wells and lower pumping power. These improvements allow for a coefficient of performance of 5-7 in heating—representing a 50 percent improvement over a traditional geothermal layout. During a typical winter, the geothermal system is capable of supplying 70 percent of required heat.

The overall project thus provides greater human comfort, with never-before cooling in the warehouse while realizing greater than 50 percent dollar energy savings.

### Université de Sherbrooke

René Dansereau, Dessau, Longueuil, Quebec, Canada, receives first place in the educational facilities category for the design of the Université de Sherbrooke—Campus de Longueuil, Quebec, Canada. The building is owned by the Université de Sherbrooke.

## ASHRAE Technology Awards Highlight Outstanding Building Projects (cont.)

With its 16-story glass tower built in the heart of Longueuil's downtown area, the Université de Sherbrooke's new campus building is one of the tallest structures on Montreal's South Shore. The 650,000 sq. ft. campus includes classrooms, offices and labs for nine faculties under a single roof. Its architectural design focuses on open spaces and gathering areas, such as a green roof "oasis," to enhance a sense of community within the campus.

Determined to create an eco-friendly building, Dansereau and his firm took a unique approach to engineer the heating, ventilation, and air-conditioning systems: Right from the start, designers chose an integrated design approach to the project. Though geothermal energy is rarely used in urban settings, designers connected a chiller to a geothermal system consisting of 37 vertical boreholes. The 165-ton screw chiller acts essentially like a heat pump and provides about 25 percent of the building's heating and cooling capacity.

With average winter temperatures falling significantly below freezing in the Montreal area, fresh air treatment can be quite costly. To enhance energy savings, three enthalpy wheels were installed on new ventilation units. These wheels recover latent and sensible heat that is usually lost in exhaust air. With an efficiency rate of 76 percent, the wheels help reduce annual heating, cooling and humidity demands.

Along with several other energy efficient innovations, energy consumption was reduced by 46 percent, consequently saving over \$250,000 a year on energy invoices. Including subsidies, the return on investment for energy-saving equipment is approximately two and a half years.

### Abbotsford Regional Hospital and Cancer Centre

Paul Marmion, Stantec Consulting, Vancouver, British Columbia, Canada, receives first place in the new health care facilities category for the design of the Abbotsford Regional Hospital and Cancer Centre, British Columbia, Canada. The building is a Public Private Partnership (P3) sponsored and operated by Laing Investments Management Services (Canada). The building is owned by the hospital.

The Abbotsford Regional Hospital and Cancer Centre (ARHCC) is an acute care hospital built in the province of British Columbia. The hospital is a technologically advanced, 63,000 sq. m., \$355 million, 300 bed acute care hospital with nine operating theatres, pediatric and maternity services, inpatient isolation rooms, medical imaging and radiation cancer treatment facilities.

Marmion and his team were responsible for the design of the HVAC, plumbing and fire protection systems of the hospital, helping to successfully complete the fast tracked health care facility on time and on budget. The building incorporates several features to conserve energy, one of which is two 900 ton chillers which are piped in a counter-flow configuration with chilled water temperature reset control to optimize energy efficiency, consuming a maximum of .5 Kw/ton of cooling. There was no incremental capital cost of adding the counter-flow configuration, resulting in an annual energy saving of \$3,400, providing an instant payback. Additionally, the water use in the hospital has been reduced by 20.6 percent through the innovative use of dual flush toilets, even in the inpatient rooms, low flow lavatory and kitchen sinks and low flow showers.

The ARHCC is running 56 percent below the Environmental Protection Agency's energy benchmark, using just 153 kBtu/ft<sup>2</sup> compared to the typical 350 kBtu/ft<sup>2</sup> for a similar building. It has also been determined that the hospital is producing 3140 metric tons of CO<sub>2</sub>, compared to an equivalent facility which produced 8470 metric tons of CO<sub>2</sub>. Ultimately, the savings in CO<sub>2</sub> emissions is equivalent to taking 1,400 cars off the road.

### Thermal Energy Corporation—Thermal Energy Storage

Blake Ellis, P.E., Burns & McDonnell, Kansas City, Mo., receives first place in the new industrial facilities or processes category for Thermal Energy Storage at the Texas Medical Center, Houston, Texas. The owner is Thermal Energy Corporation, Houston, Texas.

## ASHRAE Technology Awards Highlight Outstanding Building Projects (cont.)

In 2007, master planning determined that the cooling load of the 80,000 ton chilled water system that served the Texas Medical Center would double over the next two decades. With that in mind, the owner sought the most cost effective way to provide the increased quantity of chilled water to the campus while maintaining the high level of reliability to serve the critical needs of the medical center.

It was determined that thermal energy storage (TES) in a load leveling scheme was the most cost effective first step to meet the increased chilled water demand. This resulted in the selection of an 8.8 million gallon stratified chilled water storage tank; with a height of 150 ft., it is the tallest stratified chilled water storage tank in the world. Connecting such a tall tank that is open to the atmosphere to a closed chilled water system creates 65 psig of pressure at the bottom of the tank on both the chilled water supply and return lines connected to the tank. A traditional single direction pumping scheme could no longer be utilized and a unique simultaneous dual direction pumping scheme was created.

Conventional wisdom would indicate that a TES system uses more energy than an equivalent non-TES system. However, TES systems use slightly less energy (BTUs or kW-hr) by shifting chilled water production from the middle of the afternoon when the highest wet-bulb temperatures of the day are experienced to the evening when wet-bulb temperatures are lower. The lower wet-bulb temperatures yield lower condenser water temperatures, which allow the chillers to operate more efficiently during the night hours when the tank is charged.

Energy savings during the first year were 7-9 percent in the summer and approximately 5 percent aggregated over the entire year. Energy costs were dramatically reduced due to the real time pricing in Houston, Texas. During the first 23 days of August 2011, the owner saved over \$500,000 in electrical energy cost due to very high (\$3,000+/MW-hr) electric costs.

### Arena Marcel Dutil

Luc Simard, Compressor Systems Control (CSC), Les Coteaux, Quebec, Canada, receives first place in the existing industrial facilities or processes category for the renovation of Arena Marcel-Dutil, St-Gédéon-de-Beauce, Quebec, Canada. The building is owned by the Municipalite St-Gédéon-de-Beauce.

In 2010, the arena was equipped with the first 100 percent CO<sub>2</sub> based refrigeration system for ice rinks in the world. The existing R22 chiller was removed, as well as the existing ice mat, and the concrete slab was retrofitted to install the new system. The system uses R744 as both a primary and secondary working fluid, a natural, non-toxic, non-corrosive and highly efficient refrigerant listed A1 in the B52 code. Because there is no secondary fluid, the evaporating temperature of the CO<sub>2</sub> can be set at -7 C while keeping the ice sheet at -5 C. The result is an evaporating temperature higher than all other standard ice rink refrigeration systems.

The refrigeration system has a 3kW variable speed CO<sub>2</sub> pump that reduces the power needed for circulating the cold fluid by 90 percent compared to secondary fluid installations. For a typical ice rink facility, the savings can be up to 125,000 kWh per year. The arena was also compared to similar projects in the area and was found to have a 25 percent reduction in total energy costs. Also, when comparing the new system with the old chiller using R22, and considering an annual leak rate of 15 percent for the old system, the total greenhouse gas reduction associated with the new 100 percent CO<sub>2</sub> refrigeration system is up to 100 tons per year.

## Call for Papers Extended for Cold Climate Conference

The call for papers deadline for the Seventh International HVAC Cold Climate Conference, Nov. 12-14, 2012, in Calgary, Alberta, Canada, has been extended to Jan. 6, 2012.

Cold Climate HVAC 2012, hosted by ASHRAE, will provide key elements of a strategy by which scientists, designers, engineers, manufacturers and other decision makers in cold climate regions can achieve good indoor environmental quality (IEQ), with a minimum use of resources and energy.

“The deadline is being extended to Jan. 6 to foster the submission of a greater number of papers on international innovations in cold climate HVAC design,” Erich Binder, conference president, said.

A predominate number of Canadian papers have been submitted, and the conference’s Scientific Committee of nearly 40 members from 15 countries seeks broader participation, he said.

The range of topics includes energy and sustainability in cold climate environments; building technology for people in cold climates; indoor environment and health; challenges for remote areas; cold climate building envelopes and moisture management; HVAC system operation and maintenance; and cold climate standards, codes, regulations and requirements.

The Scientific Committee seeks papers featuring innovations in cold climate HVAC design. This includes new technologies and applications; improved methodologies, improvements to computational models or other design tools; novel methods of management, organization or quality assurance; and novel avenues of research or revised conceptual frameworks for designers.

Submit abstracts no longer than 350 words, which summarize the objectives, approach, results and conclusions of the proposed paper, and five to seven keywords by Jan. 6, 2012. Upon acceptance, papers will be due April 1, 2012. For specific topics, to submit a conference paper abstract or for more information go to [www.ashrae.org/ColdClimate](http://www.ashrae.org/ColdClimate). For additional information, contact [meetings@ashrae.org](mailto:meetings@ashrae.org).

The Scandinavian Federation of Heating, Ventilation and Sanitary Engineering Associations (SCANVAC) initiated the series of Cold Climate HVAC Conferences. The six previous conferences have been successfully organized in Rovaniemi, Finland in 1994; Reykjavik, Iceland in 1997; Sapporo, Japan in 2000; Trondheim, Norway in 2003; Moscow, Russia in 2006; and Sisimiut, Greenland in 2009.

The series of congresses have earlier been supported by national HVAC societies, the Federation of European Heating, Ventilation and Air Condition Associations (REHVA) and ASHRAE.

## ASA Report: Texas Was State With Most Improved Public Policy Environment for Construction Subcontractors in 2011



### American Subcontractors Association, Inc.

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2011 was a good year for construction subcontractors in Texas. Not only did the Texas economy suffer the effects of the “Great Recession” less than other states, but also legislators tackled many priority issues of the state’s subcontractors, according to [The ASA Report: The Policy Environment in the States](#).

The annual report published by the American Subcontractors Association shows that Texas increased from 29th overall to 10th overall among states, in terms of the report’s grading of the public policy environment for construction subcontractors.

The report also shows that Alabama, California and Iowa made major gains in their rankings, thanks to subcontractor-friendly changes in their laws.

“ASA members in Texas succeeded in driving legislative reforms in five major areas — electronic reverse auctions, payment bonds on public-private partnerships, risk allocation, lien claims for retainage, and statutory lien forms,” said 2011-12 ASA President Kerrick Whisenant, Cornerstone Detention Products Inc., Tanner, Ala. “These victories and victories in other states demonstrate that subcontractors can make a difference working through ASA. In 2012, subcontractors across the country should build on these victories.”

In 2011, Alabama, California, Colorado and Nevada improved their laws restricting retainage, while new laws in California, Iowa and Texas will help limit unfair allocation of risk through contract terms.

*The ASA Report: The Policy Environment in the States* is available on the ASA Web site, [www.asaonline.com](http://www.asaonline.com).

“Many of the reforms that occurred this year were a direct result of the grassroots advocacy efforts of ASA chapters across the country,” added Whisenant. “ASA also celebrated important legal victories in California, Maryland and North Carolina courts.”

The *ASA Report* warns both government policy makers and members of the construction team of weaknesses in their states’ public policy environment for construction subcontractors. In addition, it helps educate subcontractors about the need to remain vigilant when negotiating contracts in a harsh public policy environment.

ASA’s report scores and grades each state in seven policy areas and uses the results to calculate an overall score, grade and rank for each state. States scoring from 91-100 earn an “A.” Scores from 81-90 earn a “B.” Scores from 71-80 earn a “C.” Scores from 61-70 earn a “D,” and scores below 60 and below earn an “F.”

Taking into account both laws and judicial decisions, the report scores: (1) Prompt payment protections; (2) Treatment of pay-if-paid clauses; (3) Mechanic’s lien protections; (4) Payment bond protections; (5) Retainage limitations; (6) Anti-indemnity protections, including limits on “additional insured” endorsements; and (7) Anti-“bid shopping” measures. In 2009, ASA added “extra credit” for states that have taken the initiative to regulate controlled insurance programs. These non-standard insurance programs can have hidden risks for subcontractors.



## ASA Report: Texas Was State With Most Improved Public Policy Environment for Construction Subcontractors in 2011 (cont.)

### Mechanic's Lien Policies

Texas' H.B. 1390, signed by Gov. Rick Perry (R) on June 17, 2011, defines the deadline for lien claims for retainage, clarifying that subcontractors have 30 days from completion of their work to provide lien notices to owners. The change will allow subcontractors more time to file lien claims for retainage that prime contractors have failed to release in a timely manner. It also extends the time for a subcontractor to file a lien affidavit for retainage to the 15th day of the fourth month after the completion of a construction project, unless the owner has notified the subcontractor that its lien affidavit must be filed within 30 days of the notice given by the owner. The law took effect on Sept. 1, 2011. In addition, Texas' H.B. 1456 establishes statutory lien waiver forms, both conditional and unconditional, for progress payments and final payment on construction projects. As a result, subcontractors and their clients will spend less time developing and interpreting an unpredictable patchwork of lien waiver forms. The new law took effect on Jan. 1, 2012. The **state's mechanic lien score rose from 52 to 54.**

### Anti-'Bid Shopping' Policies

Texas' H.B. 628, signed by Gov. Perry on June 17, 2011, prohibits any use of electronic reverse auctions to obtain contracted services for state and local construction projects on which a surety bond is required. In a reverse auction, a buyer of construction services requests bids using software or an online marketplace, and sellers have to choose whether to engage in multiple rounds of bids. The ban will protect subcontractors from being forced to divulge and change their bids in reverse auctions for bonded state and local work. The law took effect on Sept. 1, 2011. The **state's anti-"bid shopping" score rose from 0 to 50.**

### Anti-indemnity / "Additional Insured" Policies

Texas' H.B. 2093, signed by Gov. Perry on June 17, 2011, bans broad-form indemnification clauses in private and public construction contracts and makes additional insured requirements in construction contracts "void and unenforceable," except on consolidated insurance programs and for personal injury claims. The law took effect on Jan. 1, 2012. The **state's anti-indemnity score rose from 6 to 94 — an "A."**

### Payment Bonds

Texas' S.B. 1048 signed by Gov. Perry on June 17, 2011, requires that payment and performance bonds complying with the state's Little Miller Act be provided on projects funded by public-private partnerships. These partnerships combine private and public investments to finance, operate and/or maintain public construction projects. The law took effect on Sept. 1, 2011. The law does not change the state's payment bond score.

### Consolidated Insurance Program Policies

Texas' H.B. 2093, signed by Gov. Perry on June 17, 2011, requires three years of completed operations coverage on CIPs. The requirement helps protect subcontractors and other members of the construction team against third-party claims for bodily injury or property damage filed after they complete work on a CIP project. The law took effect on Jan. 1, 2012. The **state earned three extra credit points.**

Founded in 1966, ASA amplifies the voice of, and leads, trade contractors to improve the business environment for the construction industry and to serve as a steward for the community. ASA's vision is to be the united voice dedicated to improving the business environment in the construction industry. The ideals and beliefs of ASA are ethical and equitable business practices, quality construction, a safe and healthy work environment, and integrity and membership diversity.

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