



**Wichai Rungruangprug  
Apichit Lumlertpongpana**

I.T.C. (1993) CO., Ltd.  
Bangkok, Thailand

Charoen Pokphan Foods  
Public Company Ltd.  
Chokchai, Thailand

**2008  
ASHRAE Technology Award**

**First Place**

In recognition of outstanding achievement in  
the design and operation of energy-efficient  
buildings



Category IV - Industrial Facilities or Processes - New

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.

## ASHRAE Regional Technology Award

*Presented to*

**Apichit Lumlertpongpana**

I.T.C. (1993) Co., Ltd.

*For the project on*

**Refrigeration System & Low Temperature Air-conditioning  
for Poultry Slaughter and Further Processing Plant**

Robert Hu  
Director & Regional Chair, Region XII

Raymond Yau  
Regional Vice Chair CTT, Region XII

***For Outstanding Achievement in the Application of Heating,  
Refrigerating and Air-Conditioning Technology***

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.



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## ASHRAE Technology Awards Highlight Outstanding Building Projects



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NEW YORK CITY – The importance of HVAC&R as it applies to a range of building types is highlighted in the winning entries for the ASHRAE Technology Awards.

Designers of systems for a hospital, a poultry slaughter house, a community center, a school and a hotel are recognized for incorporating elements of innovative building design in the areas of occupant comfort, indoor air quality (IAQ) and energy conservation. Winners have applied ASHRAE standards for effective energy management and IAQ. The awards were presented at ASHRAE's 2008 Winter Meeting being held this week in New York City.

“While each project was unique in its application of the technologies, many of the projects used similar systems or ideas to reach a design solution on a wide range of building types,” Stephen Abernathy, P.E., chair of the Technology Awards judging panel, said. “With submittals from all over the world, the program spotlights engineering innovation in applying systems that have been around for years to new applications and sharing that innovative thought with others in our industry. This helps engineers realize that there are multiple solutions to everyday design problems and that we don't have to re-invent the wheel to come up with an answer that is workable and that contributes to our desire to sustain our environment and reduce our usage of natural resources.”

Following are summaries of the winning projects.

### **Honore-Mercier Hospital**

Laurier Nichols, P.E., Rejean Blais, Simon Pelletier, P.Eng., Oanh Nguyen, Jean Molina and Marco Freitas, Dessau-Soprin, Montreal, Quebec, Canada, receive first place in the existing health care facilities category for their rehabilitation of Honore-Mercier Hospital, Saint-Hyacinthe, Quebec, Canada.

In April 2003, a serious aspergillus contamination, resulting from the spread of mildew within the walls caused by a deficient building envelope, was discovered. The situation required decontamination and rehabilitation while continuing to provide functional hospital services. The project required temporary relocation of 300 beds to an adjacent hospital that had not been used since the 1990s. It also required use of 60,000 square feet of temporary facilities for other hospital services.

The team offered integrated solutions where energy efficiency and the principles of sustainable development were determining criteria for selection of designs based on a life-cycle cost approach. This led to reduction in natural gas consumption and to a high-performance building whose greenhouse gas emissions have been reduced by 3,576 tons per year.

### **Springhill Suites**

Albert Barfield, marketing principal with Gulf Power Co., Pensacola, Fla., receives first place in the new commercial buildings category for his project work of Springhill Suites, Pensacola, Fla.

This hotel on a barrier island on the Florida Gulf Coast uses a hybrid geothermal system. The system features a 150-ton closed-loop evaporative fluid cooler. The loop field is set up in parallel with the 150-ton fluid cooler, which offers considerable heat rejection control and redundancy. The primary domestic water heaters are three each, five horsepower water-to-water geothermal heat pumps. All pool and spa heating is provided by geothermal heat pumps. In addition, over 300 tons of room unitary, ducted geothermal heat pumps are used in guest suites and to serve all other conditioned areas of the hotel.

Overall annual energy intensity for this hybrid geothermal hotel is 79 kBtu/sq.ft., which is 37 percent below the 1995 Commercial Building Energy Consumption Survey intensity for the lodging segment national average of 135 kBtu/sq.ft. By comparison, another hotel in the same geographic location but with air source equipment operates at an annual energy intensity of 139 kBtu/sq.ft.

<http://209.85.175.104/search?q=cache:uph-j4R2o64J:www.ashrae.org/pressroom/detail/1...> 03/07/2008

**Fossil Ridge High School**

Craig Watts, principal/vice president of MKK Consulting Engineers, Greenwood Village, Colo., receives first place in the new institutional buildings category for his design of Fossil Ridge High School, Fort Collins, Colo.

Functioning as a small community in itself, the high school has several different types of mechanical systems ranging in size from small DX split systems for computer room cooling to large air handlers with energy recovery devices for spaces such as the auditorium.

When operated together as a package, these components provide the school with an innovative and energy-efficient mechanical system. The demand-controlled classroom ventilation via occupancy sensors and window sensors allows for reduced energy consumption by eliminating the treatment of unneeded outside air, while providing occupants with the ability to bring in naturally ventilated outside air when they feel it is appropriate.

The dollar value of the energy savings from the mechanical, plumbing, irrigation and building lighting systems projected over the life span of the building is estimated at more than \$6 million at current utility rates.

**Firstenburg Community Center**

Rick Grove, P.E., senior engineer with Stantec Consulting, Seattle, receives first place in the new public assembly category for his design of Firstenburg Community Center, Vancouver, Wash.

The community center is a two-story, 72,500-square-foot, multi-use facility that includes a fitness area, aquatics space, meeting rooms, lounges, administration areas and a gymnasium with an elevated jogging track.

The majority of the spaces use either natural ventilation, assisted ventilation or a hybrid system. Two 97 percent thermally efficient natural gas condensing boilers, each sized to 50 percent of the full heating requirement, provide heating water for domestic, pool, building skin and ventilation heating loads. Another sustainable feature is that gray water collected from the pools' backwash filters is captured for use in flushing toilets, decreasing the amount of water introduced into the municipal sanitary system by some 500,000 gallons per year.

Thermal analysis models were developed to validate the natural ventilation design. An energy model of the building based on construction documents and documented actual operating assumptions showed 26 percent energy savings as compared to a Washington state baseline model.

**Charoen Pokphan Foods Public Co.**

**Apichit Lumlertpongpana**, managing director, and **Wichai Rungruangprug**, engineering manager, I.T.C., Bangkok, receive first place in the new industrial facilities or processes category for his design of Charoen Pokphan Foods Public Co., Chokchai, Thailand.

The design focused on a refrigeration system and low-temperature air conditioning for a poultry slaughter and processing plant, with a slaughter capacity of 360,000 birds per day.

By installing smaller compressors, smaller suction pipes and insulation material, the system saves some \$200,000 of the first cost of equipment and material. The estimated annual energy savings is nearly \$300,000 a year, with an estimated total reduction of carbon dioxide emissions equal to 1,900 metric tons per year. Water usage was reduced by 91.3 percent.

*ASHRAE, founded in 1894, is an international organization of 50,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.*

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