

case study

Hotel Earns LEED® Certification Gold

The Gaia Napa Valley Hotel and Spa, American Canyon, Calif., is one of three Gaia hotels owned by the Atman Hospitality Group, Inc. (Atman), San Francisco. Owner and founder Wen-I Chang grew up in Taiwan in an environment that nurtured union with nature. Gaia, which is Greek for Mother Earth, epitomizes Chang's philosophy of incorporating sustainable design principles like energy conservation, natural lighting, specialized green building materials and environmentally friendly practices into his hotel properties. Naturally, Atman is a member of the U.S. Green Building Council (USGBC).

Inspired by design concepts of Mickey Muennig, a student of Frank Lloyd Wright, the plans for the 133-room hotel were drawn by the firm of Todd Jersey Architecture, Berkeley, Calif., which specializes in green services, including LEED administration. By using natural lumber certified by the Forest Stewardship Council (FSC), ultra-quiet, energy-efficient HVAC systems using environmentally friendly refrigerant, low VOC paints, solar panels that provide 12 percent of the hotel's electrical needs, low-flush toilets, low-flow showerheads and tubular skylights that allow natural light into the lobby, hallways and conference rooms, the hotel earned LEED Certification Gold. An interior plaza

features a swan lagoon, which is fed by rain and recycled storm water. An educational, real-time energy kiosk in the lobby shows guests how the hotel's various systems work and indicates the daily water and electricity savings compared to ordinary hotels.

The Quest for LEED

"It was a real challenge to design a beautiful building that meets the rigorous LEED criteria for a green building and stay within budget," said Todd Jersey, principal, Todd Jersey Architecture. "The client is a hotel developer, which is a competitive, commercial market. The opportunity rested on the fact that Gaia is an independent hotel, as opposed to a chain, with a developer whose vision is that whatever is good for the earth should be included in the hotel. It was our task to make it work."

When searching for the ideal HVAC system to match his LEED certification aspirations, Chang contacted Neil Riley, president, Riley & Associates, Walnut Creek, Calif. "Chang's reputation for green hotel design is legendary," Riley said. "When you meet him, you feel his genuine passion for connecting man with all things natural. He wanted his vision to be translated and come alive right down to cooling and heating the guest rooms."



Project Name

**Gaia Napa Valley
Hotel & Spa**

Project Location

**American Canyon,
Calif.**

Completion Date

June 2007

The Team

Owner

**Atman Hospitality
Group, San Francisco,
Calif.**

Architect

**Todd Jersey
Architecture, Berkeley,
Calif.**

HVAC Engineer

**Penry & Associates,
Moraga, Calif.**

HVAC Engineer

**Guttman & Blaevoet,
San Francisco, Calif.**

HVAC Contractor

**Orson Mechanical,
Hayward, Calif.**

HVAC Distributor

**Edward B. Ward
Company,
Brisbane, Calif.**

case study

Chang wanted Gaia's HVAC system to be as environmentally friendly and innovative as the rest of the hotel's sustainable design. The HVAC system had to be extremely quiet, provide the utmost in energy efficiency and the outdoor units installed out of sight. He also wanted a smart system that offered simultaneous cooling and heating.

Mitsubishi Electric Systems Assisted in Achieving Gold Certification

Riley knew of the right system for meeting the demands of Chang's lofty vision. He described the expertise and industry leadership of Mitsubishi Electric Cooling and Heating Solutions, Suwanee, Ga. He listed the many benefits of the R2-Series Variable Refrigerant Flow (VRF) zoning system that would help Chang earn essential

LEED points. He told Chang about the unique INVERTER-driven Variable Frequency Drive compressor, which provides highly responsive cooling and heating performance in each guest room. He mentioned the ultra-quiet performance from both the outdoor and indoor units, which are perfectly suited for hotel environments. He showed Chang how the wall-mounted indoor units—with sound ratings as low as 32 dB(A)—would be installed unobtrusively in each room.

Chang realized distinct advantages of the VRF zoning systems in building a case for LEED certification for his new hotel, so he instructed Riley to proceed with the engineering plans. Riley engaged Cliff Penry, president, Penry & Associates, Inc., Moraga, Calif., who had just finished designing a Mitsubishi

Electric system for a church in Hawaii. "These systems encompass great technology and I strongly believe VRF zoning is the way the HVAC industry is headed," said Penry.

LEED Certification Commissioning

For a project to be LEED certified, building owners need help from professionals specializing in supervising and facilitating contractor-based commissioning services. For Gaia Napa Valley Hotel & Spa, Riley turned to Steve Guttman, PE, LEED AP, principal, Guttman & Blaevoet Consulting Engineers (G&B), San Francisco. Nationally recognized in sustainable design, G&B has 20 projects currently seeking LEED certification. G&B staff members serve on the USGBC's LEED core committees



For the Gaia Napa Valley Hotel and Spa, a 133-room hotel, the Mitsubishi Electric systems are quiet and efficient and helped the hotel earn LEED Certification Gold.

case study



developing national guidelines and best practices for sustainability.

Guttmann specializes in energy performance, design and energy efficiency technologies, such as heat pumps, zoned indoor units, variable refrigerant volume and variable speed drives. Guttmann was familiar with Mitsubishi Electric VRF zoning systems and was key to assisting Penry and Orson Poon, HVAC contractor, Orson Mechanical, Inc., Hayward, Calif. He was especially helpful in specifying the appropriate LEED procedures for issues like how to measure the correct refrigerant amount.

To earn LEED Certification Gold, building owners must receive between 39 and 51 points from the USGBC. The Gaia USGBC LEED-NC Report, dated June 4, 2007, achieved a total of 43 points. Twenty-three percent of the

overall “Credit Scorecard” came from the “Energy & Atmosphere” section of the report. “Six of these 10 points were earned under the ‘Optimize Energy Performance’ section,” Guttmann explained. “That’s a very high performance rating and Mitsubishi Electric systems played a significant role in achieving that score.”

Mitsubishi Electric System Adds to Environmental Harmony

“We are extremely happy with the contribution of the VRF zoning system to our overall mission,” said Yuan Sing Chang, vice president of development, Atman. “A night in our environmentally

friendly hotels should instill an awareness of ecology and man’s harmonious relationship with the earth. Unlike traditional noisy HVAC units found in most commercial hotels, Mitsubishi Electric’s systems are extremely quiet and comfortable. They are aesthetically pleasing, work well and add to the harmony of the environment—a signature of Gaia hotels.”



Mitsubishi Electric Equipment Installed

- (12) PURY-100TMU-A R2-Series (R410A) Outdoor Units
- (136) PKFY Wall-mounted Indoor Units
- (12) CMB-1013NU-F BC Controllers
- (136) PAC-YT51CRA Simple MA Remote Controllers
- (3) G-50A Central Controllers