

## Up, Up, And Away with Design/Build

by Michael Weil, editor-in-chief

It's one of the most recognized brands in America the giant red, white, and blue balloon floating above a newly sold home or commercial building. RE/MAX is the brainchild of Dave and Gail Liniger, who founded the real estate firm in Denver, CO in 1973. Today, the company is an international giant that has grown every month for more than 30 years. Very few companies with a worldwide presence can make such a claim.



In one of the company's hottest growth areas, Northern California, RE/MAX management decided to build a new headquarters location: the RE/MAX Professional Plaza. The building, in Fremont, CA would be home to the RE/MAX East Bay Group, from which 51 realtors, plus a title agency, operate. RE/MAX hired a consulting engineer and worked with him to design the mechanical system. Then a general contractor was hired to bring to life what appeared on paper. The general contractor (GC) was Paul Aboumrad of Paul Aboumrad Construction. The specifications were placed for bid and after a short time, three mechanical bids were under serious consideration. Meanwhile, ground was broken and construction begun on the structure of the triangular-shaped real estate agency home.

Now it just so happens that the site of the RE/MAX Professional Plaza was just down the street from a church where commercial contractor Russ Donnici is a member. Donnici says he stopped by the site to meet the GC and find out if the mechanicals had been let for bid.

Donnici is president of Mechanical Air Service, Inc., a \$2 million commercial/ large custom home HVAC contracting firm, headquartered in San Jose, CA. The company, a second-generation Design/Build firm, employs 12 people, and runs nine field service vehicles to handle its service, construction, and retrofit business.

"I asked if I could take a look at the plans and submit a bid, which they agreed to let me do," he explains. "The plans were fully engineered by a PE. I reviewed them and found I could deliver a higher-quality product within the budget they had. I could re-engineer the mechanical and provide a better system that would be easier to maintain AND provide lower energy consumption. In addition, I could bring that system in at \$50,000 less than his lowest bid," Donnici says.

According to Donnici, the original engineer worked with the owner, but didn't really look at how the building was to be used — he looked at it strictly from the viewpoint of how to heat and cool it.

"The unique aspect of this building is that it can be used any time of the day or night. Realtors are independent people who come and go, and want their office spaces conditioned when they're there. We achieved this objective by designing in many more zones than you normally find. This way, RE/MAX doesn't have to heat a third of its building for one realtor working after hours on a weekend. This is a more cost effective way to operate the building."

### The System

Aboumrad loved the re-design and entered into a Design/Build contract with Mechanical Air Service. In addition to the significant 16% cost savings, the re-designed mechanical system provided the client with the following:

- A system that would operate at a 17% monthly energy savings compared to the original design
- A 12% increase in the number of individual zones
- A 26% reduction in annual projected maintenance costs
- Improved indoor air quality
- Remote temperature sensors to eliminate the problem of thermostat tampering.

The original mechanical design had three variable air volume (VAV) systems with a boiler and hot water reheat coils. VAV systems can be energy efficient. However, Donnici found, after doing an operational model of the building, it was more energy efficient to use several Trane rooftop package units together with Carrier zone controls. This allowed selective systems to operate efficiently after hours and would not require running VAV units when only a few realtors were in the building in different areas.

This building was designed to be Class 'A' office space with high design quality standards. This included providing 62 individual control zones, duct sizing to allow for reduced air velocities for sound control, and a selection of air diffusers with an appropriate ADPI (air diffusion performance index) for the application. A complete commissioning process was included in Mechanical Air Service's bid to ensure the system performance met all design expectations.

Because they were late into the game, Mechanical Air Service had to fast-track the job. Aboumrad needed the final drawings fast and, using their in-house CAD capabilities, Donnici and his team were able to turn out drawings in less than two weeks.

"One of our fortes is to meet challenges like fast tracking drawings and projects," Donnici says. "We developed the plans, generated the CAD drawings, and as a CEM, I can stamp drawings for the state. The city accepted the drawings and work began right away."

Scott Larson, vice president of service, provided project management services. All client schedules were met. It was through the combined effort of all Mechanical Air Service employees, together with the cooperation of other trades and the efficient scheduling of the general contractor, that this project met the owner's delivery schedule and expectations.

The key to success of this project, and all projects, is communication and planning. Donnici says Aboumrad did an exceptional job of communicating with all the trades, right from the beginning.

From a control standpoint, Mechanical Air Service is fully trained and authorized in a number of different solutions, including Novar Controls, Johnson Metasys, and Carrier Comfort II System. In fact, MAS is a Novar Logic One dealer and a Johnson Metasys Dealer. "We decided to use Carrier's Comfort II system for this project," says Donnici. "This reduced the need for an on-site computer for interfacing with the system. The

system was much easier to manage internally, easier to service, and the utility costs were reduced. None of these things would have occurred in a typical plan/spec environment."

### **Commissioning**

Commissioning of the building was performed prior to occupancy. All systems were thoroughly tested and balanced. Static pressures were measured and an air balance was done. Donnici says his team also conducted pressure testing of the duct system for leakage.

Says Matt Donnici, Russ' son and vice president of construction, "Because of the reality of system operation, we knew that a building performing to the engineered values doesn't always provide the comfort levels the client wants. As part of the commissioning process, we also

provided for the ability to conduct other comfort balancing as needed for the client after occupancy.

" Our commissioning process also included carbon dioxide monitoring of the building for an extended period of time to be sure we were meeting and exceeding all OSHA and ASHRAE 62 requirements for superior indoor air quality. All units use high efficiency pleated filters for increased particulate control."

When RE/MAX took possession of the building earlier this year, there were several issues with the use of the individual zones. According to facility manager Megan Elliott, the problems weren't necessarily with the mechanical systems, but more "people-based" in nature.

"We had so many zones and many people wanting to adjust temperatures all over the place. The system was designed to accommodate that, but I had no idea what I was doing. We called the contractor back in and they were very prompt and took care of our problems. It was a training issue and a learning curve. Now things have settled down and we are very happy with how the building works."

So today, the RE/MAX balloon flies over the latest piece of real estate in the company's portfolio — the RE/MAX Professional Plaza.

## **CATEGORY C**

New Construction less than \$500,000

### **WINNER AT A GLANCE**

#### **COMPANY:**

**Mechanical Air Service, Inc.**

#### **PROJECT NAME/LOCATION:**

**RE/MAX Professional Plaza, Fremont, CA**

**TOTAL COST: \$343,372**

**KEY CUSTOMER CONTACT:** **Paul Aboumrad**, president, Paul Aboumrad Construction, Fremont, CA., Megan Elliott, facility manager, RE/MAX, Fremont, CA

**CONTRACTING FIRM PRINCIPAL:** **Russ Donnici**, CEM, REA, president, Mechanical Air Service, Inc.

### **THE PROJECT TEAM:**

- Scott Larson, VP Service/HVAC project manager, Mechanical Air Service, Inc.
- Matt Donnici, VP Construction/controls foreman, Mechanical Air Service, Inc.
- Russ Donnici, President, Mechanical Air Service, Inc.

## **PRODUCTS KEY TO SUCCESS**

- Rooftop Unit - Trane YSC024F I OOB (2 ton server room unit with low ambient controls)
- Rooftop Units (4) - Trane YSC036A4RLA (3 ton)
- Rooftop Unit - Trane YSC048A4RLA (4 ton)
- Rooftop Units (3) - Trane YSC060A4RLA (5 ton)
- Rooftop Unit - Trane YSC072A4RLA (6 ton)
- Rooftop Units (7) - Trane YSC090A4RLA (7.5 ton)
- Carrier Zone Controls
- Shoemaker diffusers
- Ruskin Smoke/Fire Dampers
- Dayton exhaust fans