GEO OUTLOOK

The Publication of the GeoExchange Industry

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United Methodist Retirement Community

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Geothermal Makes the Grade
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By Wael El-Sharif
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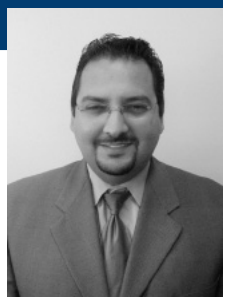

In 1995, when the Geothermal Heat Pump Consortium started, various benchmarking studies found that consumer awareness of geoexchange technology was lower than our industry had hoped for. Since then, we as an industry have changed the way millions of people feel about geoexchange.

In the late 1990s, the GHPC launched a comprehensive consumer awareness campaign that led to more than 120 million viewer/listener impressions. In light of that, we at the Consortium believe that there has been a very positive upturn in the knowledge-related obstacles our industry has had to deal with in the past. And although there has been an increased interest in our technology in the past ten years, it's up to you, as the key person in front of these installations, to keep that momentum going.

Geoexchange cannot sell itself. Just like anything, this technology needs marketing to move. In the past, some have relied on an "order-taking" approach to marketing their geothermal products and services, but that can only reach so far. To get new customers in the door and to turn them into our newest advocates, we need to become attentive marketers, moving into our markets and making people aware of our technology's benefits and how your company can help them to achieve those results. Those who are currently doing just that have found that the increased awareness about geoexchange has created an ideal market for their business' services. The only way that they have gotten so many people to say "yes" is by going to the customer rather than waiting for them to come to you.

In addition to our national marketing campaign, the Consortium has also helped change targeted markets in New York, California, Oklahoma, and are currently working in the Illinois market. As a result of these, combined with your efforts, our industry is experiencing an unprecedented growth rate. The numbers speak for themselves, and our knowledge has helped to create an industry-wide confidence in geoexchange. This confidence has perpetuated trust, and that trust is selling more systems every day.

Be more aggressive in your marketing to help you make your sales. Tap into all available resources to help you spread the word. Distribute our marketing materials to your prospects. Sign up on the free Geoexchange Industry Business Registry on our web site to help get your name out to potential customers. Network amongst one another. And don't be afraid to promote geoexchange wherever you go. Anyone without a geoexchange system is a potential customer. The only reason they may not yet have a system is because someone like you hasn't told them it's possible for them to do so.

You are our industry's most important link. Without your marketing efforts, our technology couldn't continue reaching new heights, taking more of the market as its own. Geoexchange is the most energy efficient, environmentally clean, and cost effective space conditioning technology available. We all know it. Now it's time we tell the world why we believe the way we do.

Directors' Forum

Notes from IGSHPA

By Jim Bose
Executive Director,
International Ground Source Heat Pump Association

From the minute we pick up a newspaper, turn on the television, or flip on the radio, we are being marketed to by someone. Effective product marketing is imperative to the success of any enterprise. The GSHP industry is no different. Back in the 80s when we were standing in long lines at the gas pumps, our industry experienced growth. Once again the industry has been given a huge present by the economy. High oil and gas prices are here, and consumers are worried about paying their utility bills this winter. How do we make the most of this rare marketing opportunity?

Some answers may be found in this quarter's issue of the Geo Outlook. This issue covers success stories and reviews tips and tricks on marketing to specific markets. But, the one key to this industry's marketing success is competitive cooperation. IGSHPA was founded by that competitive cooperation idea, where like-minded individuals worked to establish a voice for their industry.

Doors are opened by our predecessors and by our competitors. Many times one industry professional will take weeks to sell a customer on the idea that his job is ideal for geothermal, only to lose in the bidding process to a geothermal competitor. However, when any one project goes geothermal, the entire community benefits. As the industry amasses examples of the successful use of the technology, we are all closer to becoming part of the mainstream HVAC market.

Reaching out to new markets is also important for the geothermal industry's growth. As a community, we have to continue to strive and make things happen. To reach a new customer base, develop a plan that incorporates a true understanding of what they need to know in order to make an informed decision. Different sales approaches are needed to reach a school administrator as compared to selling to the homeowner. Reaching business professionals is always a marketing challenge. Schedules are tight and the demands on their time are tremendous. Find a creative way to get your foot in the door like a working lunch presentation.

The government arena also presents a huge opportunity for geothermal. Effective marketing by IGSHPA, the GHPC, and enterprising industry professionals opened this door, and the US government is now one of the largest proponents of the industry. The same marketing techniques jump started the Canadian governments' interest in the technology. Today, they are the driving force behind the ever-expanding, geothermal marketplace across Canada.

Undertaking effective marketing action today can secure your business for the long-term and thereby support the entire community. What we do today as an industry may very well help future generations have the resources to meet their potential energy needs.

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Patrick J. Hughes

Building Technologies Integration Manager
Oak Ridge National Laboratory

Patrick Hughes has been engaged in advancing energy efficiency and renewable energy technologies, and specifically geothermal heat pump technology for 26 years. Hughes oversees the line and programmatic relationships of the ORNL Buildings Program. For the Department of Energy's Federal Energy Management Program, Hughes established and led an initiative that resulted in federal agencies investing over $200 million in GHP projects through Energy Savings Performance Contracts, Utility Energy Service Contracts, and direct funding. He is past chairman of the technical committee cognizant of GHPs at the American Society of Heating Refrigeration and Air-Conditioning Engineers. He has represented the U.S. perspective on GHPs at International Energy Agency (IEA) events in China, Sweden and Austria. Hughes has Bachelor of Science and Master of Science degrees in mechanical engineering from the University of Wisconsin, and a Master of Science in engineering management from Stanford University.

Billy D. Abner

Marketing Technical Services Manager
East KY Power Cooperative

Billy Abner has served on the IGSHPA Advisory Board since 1998. He has 31 years of experience in the electric utility industry and is the marketing technical services manager for East Kentucky Power Cooperative. Abner has a Bachelor of Science in industrial technology and also is a licensed Master HVAC contractor. He spent 10 years working in the engineering, transmission and substation areas as an engineering substation inspector technician. He has been involved in marketing and customer service areas of wholesale and retail power since 1983. Abner has extensive knowledge of energy usage in the residential, commercial and industrial markets. He serves on the Kentucky School Plant Management Advisory Board and as chairman of the Powell County Tourism Association. He is a member of Air Conditioning Contractors of America and the National Home Builders Association, and is involved in numerous national, state and local organizations.

United Methodist Retirement Community

By Kathryn Jones

The past 40 years at the United Methodist Retirement Community in Enid, Okla., have been dedicated to providing its residents, their friends and their families with quality service. With the construction of their independent living addition, Wesley Place, they will continue to do so with new geothermal heat pumps.

Utility Markets Geothermal to the Community

The Wesley Place homes are considered by the Oklahoma Gas and Electric (OG&E) utility to be part of their program, The GeoThermal Home. Being a part of this program means that the homes were built with advanced thermal protection and new, energy-efficient

Photo courtesy of IGSHPA staff

Executive Director Scott Wegmiller and Director of Marketing Jeanie Gardner pose in front of OG&E's "The Geothermal Home" sign at the Methodist Retirement Community.

construction standards. Mike Newcombe, who manages OG&E's The Geothermal Home program, said: "OG&E has promoted geothermal strongly for the last several years. The GeoThermal Home incorporates a strict set of construction standards along with geothermal technology."

In order to build The GeoThermal Home, builders must follow three basic requirements: 1. Use only IGSHPA-accredited drillers and installers for geothermal heating and cooling system; 2. Provide pre-construction information and floor plans to OG&E representatives for review; and 3. Meet all requirements stated in OG&E's The GeoThermal Home Program Standards Manual and pass the required performance testing.

Weighing the Costs

Scott Wegmiller, executive director of the retirement community, knew that the Wesley Place homes were going to need to be cost-efficient because the retirement community would be paying for the residents' utilities. The builder, David Ritchie of Chisholm Creek Development, said the retirement community had originally wanted conventional heating and air-conditioning (HVAC) units for their new homes. Ritchie, who had installed many geothermal systems, knew this going into the bidding process. OG&E provided a cost analysis of expected utility bills for the Methodist Retirement project that compared geothermal systems to a typical heating and cooling system–10 SEER air-conditioning and 80 percent gas furnace. "At the bidding stage of the project, we produced a letter that outlines the expected heating, cooling and water heating costs for one of the homes in the community," Newcombe said.

What OG&E found would ultimately convince Wegmiller and his staff to choose geothermal. As compared to conventional HVAC units, OG&E promised the retirement community a savings of $100 a month per duplex side with geothermal units. With the majority of the project consisting of 11 duplexes, this was a savings with which Wegmiller was impressed.

"David believes that the cost savings that the community was to receive was an important reason they chose Chisholm Creek Development and David Ritchie

Photo courtesy of IGSHPA staff

The heat pumps in the homes also provide the retirement community with hot water at a reduced cost.

to build the homes," Newcombe said. Wegmiller added: "David had already done a lot of geothermal homes, and we were really into having efficient homes. Geothermal worked well with this plan."

The Wesley Place homes consist of two design layouts. The Premier Homes are single-family, 2,200-square-foot homes with three bedrooms and two baths. The Town Homes are duplexes with two floor plans: two bedrooms and two baths for 1,500 square feet or two bedrooms plus a study for 1,700 square feet. Ritchie said that all the utilities are about $89 a month for the 1,500-square-foot homes; $93 a month for the 1,700-square-foot homes; and $110 a month for the 2,200-square-foot homes.

Getting the Residential Thumbs-Up

Residents heard about the opening of the retirement community through a number of outlets, including newspapers, word-of-mouth and seminars. Resident Charles Yuhnke said he had heard about the homes through the people he talked to at the Methodist Church in Enid. "They have the nicest nursing homes in the city and have a good reputation," Yuhnke said.

Yuhnke and his wife had lived in Waukomis, Okla., for 50 years and "had a nice home, a nice yard, and my wife grew flowers," he said. "The wife decided we

needed to cut down." He said they talked about moving to a nursing home where they would spend $50,000 to $100,000 to live and they "wouldn't get a penny back," Yuhnke said. "We had also heard that most people that lived there weren't too happy with conditions there."

The Yuhnkes decided to do some more looking around. After hearing about the homes from the Methodist Church in Enid, they decided to take a visit to the community. The most appealing part for the Yuhnkes about buying a home in the community was the fact that of their $100,000 spent for the home, they would receive 90 percent of that back if they leave. According to the Enid retirement community's Web site, the community touts the 90 percent refundable entry fee program in order to allow the residents to remain in control of their assets.

The Yuhnkes decided to move in when the homes in the community were completed. "We were so impressed, and we were one of three families who were charter residents in the community," Yuhnke said.

Only Minor Glitches

There were only minor challenges that the retirement community staff encountered, but both were fairly simple to overcome, Wegmiller said. The first was in a 2,200-square-foot unit–a simple installation error would cause "the heat pump to go to cooling and kick the emergency heat strips in," Wegmiller said. The error was corrected by properly changing with field wiring from the duct heater to the heat pump controller in order to allow the electric heat to come on only as second-stage or emergency backup heating.

The second challenge was that a contactor was taken out of service due to electrical service being provided that was out of range of the manufacturer's specifications. Once again–simple field wiring was changed, and the unit operated normally. Wegmiller said both challenges were easily overcome.

Yuhnke said he praises the staff at the community center for working so hard to fix any problems that he has with his home. He said that his heat pump allows him to have hot water, but sometimes the water can be too hot. "You can certainly tell how efficient the (geothermal) unit is by how hot the water can get," he said. "But all I have to do is call the office, and they send someone over to adjust the temperature." He added that any time he needs "so much as an air filter or a light bulb changed, I call the office for their help."

A Win-Win Situation

Wegmiller said that all of the residents are very pleased with their geothermal units, which were manufactured by ClimateMaster. "The residents tell me how quiet they are," he said. "With the unit in the garage, they don't even hear the compressor. It's really a wonderful system." He added that after the first unit was built, it was used as a showroom for marketing purposes. "I'm in the marketing unit a lot, and I'm very pleased with the system," he said. "Even with the vents in the ceiling, you can't even hear the air turn on and off."

Ritchie said there was another reason the retirees were so impressed with the heat pumps. Since geother-

Photo courtesy of IGSHPA staff

The kitchen in a home within the retirement community.

Photo courtesy of IGSHPA staff

The living room in a home within the retirement community.

mal technology is not exposed to outside elements, the residents have had fewer health and respiratory problems. "All of the buildings are so tight and with the air filtrations, the residents have fewer complaints about their allergies," Ritchie said.

Yuhnke said he really enjoys living in a home with a geothermal heating and cooling unit. He had never lived anywhere with a heat pump before, and when he heard the units were equipped with such technology, he was a bit skeptical. "The community people passed out a booklet about geothermal, and I gave it to my son to look at," Yuhnke said. "He assured me that it was an efficient technology and had to be a good system."

Yuhnke added that when he and his wife lived in their previous home, he had to pay for added expenses with his air-conditioner and heater. "I would pay for freon, have the motors and fan belts checked out, and one time the switch went out," he said. "I had to spend $100 to $150 a year just to have it fixed." He added that they had the air-conditioning replaced while they lived in the home. He said with this system, there is no noise at all, and "all of a sudden, you feel heat or cold air." He said that one night, he and his wife were preparing to go to bed, and it was cold in their home. "Fifteen or twenty minutes later, after we had turned the temperature up, we were fine," he said.

Another resident, Roy Schlemmer, said: "(My wife and I) enjoy living in the community from the minute we've been here. There is adequate spacing for all of our belongings. We don't have any empty rooms, and that's saying something since (our home) is only 300 square feet less than what we lived in before. Everything is new, and if it doesn't work, they repair it." He is also impressed with the geothermal unit. "It's unbelievable. I've never lived in a home with one, and there's not a hot or a cold spot in the space that we can tell. It

According to the United Methodist Retirement Community's Web site, the living community prides themselves on providing their tenants with more than simply a place to live, but a distinctive, service-enriched environment for the active senior adult. Wesley Place allows residents to remain in control of their assets by offering a 90 percent refundable entry fee program. Features of the homes include:

- Unique designs
- Built in appliances
- Spacious closets
- Attached garage
- Patio
- Smoke/fire alarm
- Flexible meal plans
- All utilities paid except telephone and cable
- Weekly housekeeping
- Emergency alert system
- Building and grounds maintenance
- Maintenance of furnished appliances
- Scheduled transportation
- Full use of campus facilities
- Planned social and cultural events
- Priority access to assisted living and nursing home care as needed

maintains a constant temperature and reacts immediately and efficiently."

OG&E was so impressed with the project that they featured the community in several of their ads and during the Enid Parade of Homes, Newcombe said. "All of the community homes were sold even before the homes were built," he added. "It's a win-win: all homes sold and few customer complaints." ◆

Key Players:

- Owner: United Methodist Retirement Community
- Building Architect: Corbin Associates
- General Contractor: Bass Construction
- Mechanical Contractor: Lloyd's Refrigeration
- Mechanical/Electrical Consulting Engineer: Fred Richardson
- Local Utility: Oklahoma Gas and Electric
- Heat Pump Supplier: ClimateMaster

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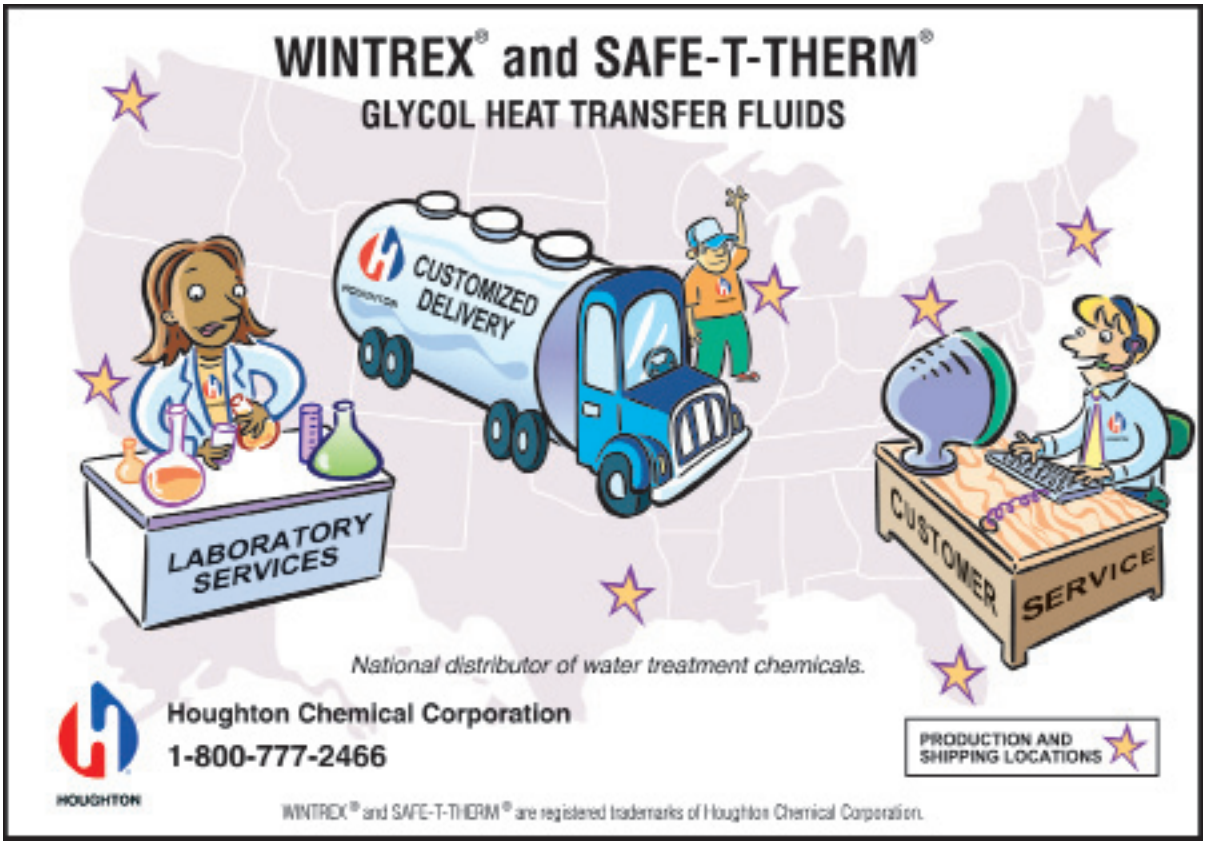

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Retrofit Customers are the Baby Boomers

By Dara McCoy

Back then, it was groovy to listen to "Mrs. Robinson" while driving a '67 Mustang or "souped up" GTO on 10-cent gasoline to the drive-in movie. Coke was the soft drink, carhops at Sonic actually wore roller skates, and it wasn't surprising if your house had a bomb shelter in the backyard.

Born from 1946 to 1964, the Baby Boomer Generation survived the tension of the Cold War, saw President Kennedy assassinated and picketed Vietnam. Today, they are between the ages of 40 and 58, and they are the retrofit market.

Greg Woodman, a private consultant with 16 years of sales and marketing experience in the GHP industry, said houses built in urban and rural areas during an economic boost in the 1980s are the ones with equipment that will need a retrofit today and for the next several years.

"They're hitting that 15- to 20-year age range, which means they're ready to be replaced, and inventory as far as retrofit equipment that's going to be replaced from today for the next 15 to 20 years is growing every single year," said Woodman.

What Do Boomers Want?

Woodman said the baby boomers are the ones who occupy the homes built in the '80s and are the ones who will need to decide on a replacement of their old heating and cooling systems. This is the market most contractors will want to focus their advertising and marketing efforts on in order to get retrofit business.

Woodman said whether contractors market through direct mail, print, radio or whatever medium they choose, they have to know what the customer wants and how to match geothermal heat pumps to those desires.

Photo courtesy of The ACT Group

Greg Woodman is a private consultant with 16 years of sales and marketing experience in the GHP industry.

"If you look at what's important to the baby boomers, time is their No. 1 issue, and they're very focused on comfort," said Woodman. "So, when you're looking at a customer who wants quieter operation, better humidity control, better indoor air quality, lower utility bills, fewer headaches with maintenance and cares down the road, geothermal fits all that stuff like a glove."

Though the payback and lower utility bills may certainly be good benefits, saving money may not be the primary focus of a baby boomer. "Baby boomers make 70 percent of the income in the country, control 50 percent of the discretionary spending money, which is money they can spend above and beyond what the

normal bills are out there," said Woodman.

Comfort and time are the primary selling points for these potential retrofit customers, but Woodman said many contractors only focus on the payback because it may be the benefit they understand the most or the only one they have tools to help present. Woodman said the economics of GHPs shouldn't be forgotten altogether. He said comparing utility bills from 10 or 15 years ago to today and knowing the volatility of utility prices makes the GHP attractive.

"The peace of mind you get by knowing, no matter what happens, you're paying the absolute minimum for energy to heat and cool your house and to provide comfort in there, I mean that's a big hedge against inflation for the future," he said. But while money shouldn't be left out of a presentation to the baby boomer, it shouldn't be the driving force. "More people are focused on the comfort issues than the payback," said Woodman.

Getting the Message to the Market

Woodman said contractors have several options to market geothermal heat pumps to retrofit customers. When he was the director of sales and marketing in the geothermal business, direct mail, advertising in local media, local utility marketing assistance and geothermal open houses all provided great opportunities.

He said the open houses were a great chance for potential customers to see the technology and ask the homeowners whether they felt geothermal was a good investment. It's also a great chance for contractors to build leads.

"You've got very highly-qualified leads there, and that was a very powerful tool for not only new construction, but also it really attracted a lot of retrofit customers," he said.

Often contractors find that educating customers about geothermal heat pumps is often as or more important than persuading them to install one. Woodman said the awareness level of GHPs in the Baby Boomer Generation, like many others, isn't very high. In fact, he said many contractors are unaware of geothermal technology.

"That's the entire sales process is the educational process," he said. Good pictures of sites and illustrations of how a GHP works are very important when presenting to someone new to the technology. Woodman said being careful to use laymen's terms or at least explaining technical terms can help a customers' understanding.

"When people understand it and comprehend what you're trying to explain to them about the technology, it's a whole lot easier for them to say yes," he said.

Baby Boomer Barriers and the Seven Magic Questions

Some barriers to selling geothermal to a new-construction customer are the same as selling to potential retrofit customers, but some concerns that will be unique to retrofit customers should be addressed by contractors.

Woodman said perhaps the biggest barrier will be the retrofit customer's concern for their yard. "The mess that the loop makes when you get the rigs and backhoes and those kinds of things out there to put the loop in, you've got to find a way to quell those fears," he said. The time and effort retrofit customers may have spent on landscaping their yard is important to them and should be addressed.

"For a retrofit owner, you want before, during and after pictures for a retrofit to show them 'Okay, here's what we're going to do to the yard'," Woodman said. Outline the construction process for the customer with examples for a week after construction is complete, a month after and then a year down the road, he said. Preparing the retrofit customer for what will be done will help reduce some of those initial fears.

Woodman said it's necessary to remind the customer of the long-term benefits and the long-term decision for the comfort and savings of their home for over 20 years into the future.

As with new construction customers, the large investment required to install a GHP is the second largest barrier to retrofit customers. Woodman said the way to overcome the price tag is to focus on the value GHPs can bring the homeowner, that is, what the customer says is valuable to them.

To find out what's valuable to the customer, Woodman said he asks his Seven Magic Questions:

1. Do they have any hot and cold spots that they want solved?
2. Do they have any problems with allergies or asthma or dust?
3. Do they have any issues with humidity, too humid in the summer, too dry in the winter?
4. Is the old system noisy, is noise an issue for them?
5. What kind of past repairs have they had?
6. Do they maintain the system properly?
7. Are they concerned about the utility bills?

"Those are all things that can have a major impact on that customer's life with the heating and cooling system," said Woodman. Geothermal heat pumps have answers to each question. If they are concerns of the customer, then the contractor has found the value of GHPs for that customer, which can offset the cost barrier.

Common GHP Misconceptions

Woodman said sometimes contractors and home owners believe they don't have enough room in their yard to install the loop. "You could take a small yard and as long as I can get the drilling rig in back there or my horizontal boring machine, in most applications we can get a loop in there," he said.

Another misconception is that geothermal technology is new and untried. "I think a lot of times we present it as being this unproven technology," Woodman said. "My gosh, these things have been around forever."

Contractors have to focus on taking the mystery and uncertainty out of geothermal heat pumps. "We have to remember that the ground source heat pump is a heating and cooling system," he said. "The only difference is we have a little bit better way of taking energy from the free source."

Baby Boomers Sold on Rock, Peace and GHPs?

Woodman said contractors might find the baby boomers more open to trying a different technology with their ability to do their own research on the Internet, but contractors should still push the technology as a choice customers can have confidence about. "We have to drive home that this is not a new technology," said Woodman. "This is tried and true. There's no guess work. There's no magic."

Bringing up some of the long-term warranties available by major manufacturers may also help take out some of the uncertainty. Some loop warranties are for 50 years or more, which could be a major benefit to baby boomers looking at retiring without repair worries.

"Most people want a set-it-and-forget-it attitude," said Woodman. "We're more worried about the new car or the new boat or getting an RV, especially people in this age range who are looking toward retirement."

Contractors must tap into this attitude and sell the baby boomers on GHPs just as Simon and Garfunkel, The Rolling Stones, and The Beatles sold them on music when the boomers were teens. Today, as they plan for retirement, geothermal heat pumps' comfort and convenience appear to be the marketing keys.

Unearth Customer Needs

By Dr. Lee Manzer

What occurs in the marketplace determines the success or failure of the business. It may be correctly stated, that the most important activity that takes place within the organization is the exchange between the seller and the buyer. If this exchange does not happen the organization will cease to exist, as will the positions of all its employees. Sam Walton said it best, "The customer can fire us anytime." As obvious as this concept may be, an area that frequently is neglected by businesses of all sizes is marketing activity. A better understanding of marketing increases the probability of marketplace success.

A quote, often attributed to Henry Ford, adorns the desk or office wall of many business executives. This quote reads: "Nothing happens until someone sells something." The adage correctly emphasizes the importance of selling to any business, but it is misleading. Most practicing businesses feel that selling and advertising constitute the whole of marketing. They tend to believe that if the "right" salesperson was hired or the "right" amount of advertising was put forth, success would be ensured. This is not necessarily true. It is important to understand that sales and advertising are just two parts of the total marketing process.

There are many definitions of marketing. A traditional definition is: "marketing is the process of planning, and executing the conception, pricing, promotion and distribution of ideas, goods, and services to create exchanges that will satisfy individual and organizational objectives" (American Marketing Association definition). In other words, marketing is anything that helps the exchange process between a seller and a buyer. The seller provides goods and services while the buyer provides revenue.

Typically, the seller's activities that facilitate this exchange are called the marketing mix. This mix is composed of product, distribution, price, and promotion. Numerous decisions are made in each of these areas. Within the product area, you must develop the product, market test new products, modify existing products, eliminate products that do not satisfy customers' desires, etc. With pricing, you must formulate policies, determine a method or methods used to set prices, determine discounts, etc. With distribution, you must analyze various types of distribution channels, develop channels, design appropriate channels, set up inventory control systems, etc. In the

Photo courtesy of IGSHPA staff

Dr. Manzer, a nationally recognized expert on service quality, lectures to his marketing class at Oklahoma State University.

Photo courtesy of Oklahoma State University

Dr. Manzer has presented hundreds of seminars to public and private organizations on service quality, leadership and goal setting.

area of promotion, you must set promotional objectives, determine advertising, public relations, personal selling policies, etc. Thus, it can be seen that marketing involves more than just salespeople and advertising, indeed it involves every employee (technical, clerical, support, etc.).

As with all areas of business, marketing demands decision making. A vital part of marketing decision making is the analysis and evaluation of information regarding three general areas: 1) the external environment in which the company operates, 2) the marketing activities of the company and 3) active and potential customers. The better one understands these three areas, the greater the possibility of marketplace success. It should be noted that before one can analyze or evaluate information, the information must be obtained. Many organizations do not take advantage of the information sources that are readily available. Experience has also shown that if the information is obtained most organizations do not evaluate the knowledge. This is a serious mistake.

There are a number of broad societal forces in the external environment that shape the activities of every business. These may include: the physical environment, sociocultural forces, demographic forces, science and technology, economic forces, and political and legal forces. Businesses cannot afford to ignore the reality of their impact upon the geothermal industry. Information concerning these factors is available through government, trade and commercial sources. Additionally, an organization's own internal files contain a wealth of data.

One of the major detriments to assessing one's marketing activities is understanding the organization's abilities. It is common for management to conclude that marketing is complex and beyond its power. This is generally not true. A few guiding principles can take a firm a long way. For example, marketing strategy can be complex, but the simple essence is: 1) Define the target market (i.e., the people you wish to serve); 2) Develop a marketing mix (as previously defined) to satisfy that selected target. Another guiding principle is to differentiate your product from the competition. Product differentiation is calling buyers' attention to aspects of a product that set it apart from its competition. These aspects could include price, long-term savings, quality, convenience, service, etc.

Understanding potential customers is a key. The goal of the seller-buyer exchange is satisfaction for both parties. If this is indeed the goal, logic tells us we must know what brings satisfaction. Additionally, it would be very valuable to understand how the customer thinks. Lets review a few customer concepts. What do customers want? The challenge is to understand the unsatisfied need or want, and not just see geothermal systems as products. For example, consider drill bits. No one really wants a drill bit; what is wanted, or needed, is a hole and the bit is the means of satisfying the need. People do not really want cars; they want transportation or the prestige associated with owning an automobile, and the car satisfies their need or want. People do not want or need a geothermal system. They want or need reasonable climate control, etc. A key for the seller is to determine the want or need and satisfy it more effectively and efficiently than the competition. It may seem to be intuitive, but it takes real effort on the part of the seller to focus on the need or want and not focus on the product. Why? Because sellers know more about the product than they do about the needs! It could be informative for the geothermal industry to study the introduction of the microwave. Today, no one can deny the wonder of the microwave, its quality, convenience and speed–in fact, it is a necessity. Such was not always the case. It took years, from the mid-1960s to the late 1980s, for the microwave to spread throughout the United States population. In the early 1960s, the need for a microwave was not evident. Only when the need arose did the

marketplace expand. Think needs-wants!

Another valuable customer insight is the product adoption process. Businesses that understand why and when customers accept new products have an advantage over competitors who do not understand. This understanding requires a familiarity with the adoption process. The mental and behavioral stages through which an individual adopter (a continual user of the product) passes before actually making a purchase or places an order constitute the adoption process. These stages are awareness, interest, evaluation, trial and adoption. Awareness is knowing the product exists. Interest means the potential customer is seeking information. During evaluation, the potential customer is determining if it makes sense to try the product. Trial is a sampling of the product. Adoption is the purchase and continual usage. The value of the stages is as follows: What if potential customers know of geothermal systems but never do anything else? What happens to the company? It fails! What if the potential customers are interested and seek information but never do anything else? The company fails! And so forth, down the stages. The company is only successful if the adoption stage is reached. But, what if people are stuck in the various stages? The goal of the geothermal system seller is to unstick them. This can only be done if you know at what stage they are stuck and how to unstick them. The various stages would require different marketing approaches, but if geothermal systems truly satisfy a need it can be accomplished.

Marketing is not a magic cure-all. It cannot save all products or automatically change people's need and wants. It can, however, be a valuable tool in creating successful exchanges if its concepts, such as those above, are understood. Geothermal systems have many advantages over existing systems, but being a "better" product will not always ensure success. Marketing is more than selling and advertising! Taking advantage of all marketing strengths will serve both the customer and the geothermal systems industry.

From Aeronautical Engineer to Geothermal Guru

By Dara McCoy

Feeding prospective customers coffee and doughnuts in their homes while explaining geothermal heat pumps by hand-drawing figures on a yellow tablet of paper may not sound like the most advanced marketing tools, but in 1978, it was useful for one of the oldest GHP contractors still in business today.

Jay Murphy stepped into the geothermal market in its most fledgling stage. Murphy was working as an aeronautical engineer in Tulsa, Okla., when he met a fellow engineer who was installing solar systems. Not long after helping install those solar systems, Murphy went to see Jim Bose in Stillwater, Okla.

Bose was just beginning to push geothermal technology, and he hooked Jay Murphy. "I just got fascinated with the technology, and I quit my job and good pay and started my company with one pick-up truck and a one-car garage putting in geothermal heat pumps and solar systems," said Murphy.

Murphy admits it took him a while to totally believe in the technology, especially since there was little data on the system and savings. Fortunately, his first five or six installations were in existing homes, which allowed him to make comparisons.

"When people started saying they were saving 50 or 60 percent on the utility bill, my customers became excited," said Murphy. "That's when I really knew we had something."

Taking Success Record into Commercial Geothermal

Despite the changes that 26 years can make in geothermal technology, the marketplace, and his own business, Murphy hasn't looked back. In 1986, he merged with a service company owned by Peter Shillingford to start K&M Shillingford, the company name he currently works under.

Far from the days of yellow tablet drawings, Murphy has driven his company to success and gathered some useful tools for marketing and running a business that geothermal contractors can implement today. "Jay's been a stalwart of our industry for as long as I can remember," said Jack DiEnna, Geothermal Heat Pump Consortium assistant director. "He's very dedicated, very driven, and very focused."

Murphy said about 60 percent of his company's dollar volume comes from geothermal jobs and that about 50 to 85 percent of that is from commercial installations. He said in the last seven or eight years he has moved his company's marketing focus to local business and mostly left the national and international business because he wanted to be home more.

"It's really gone from a residential focus to a commercial, industrial focus as a result of our marketing efforts that have been more geared towards business owners, business groups, chamber of commerce, IGSHPA, the architectural community and engineering community to let people know the services we have all on a local and regional basis," he said.

Murphy said his company's growth has also allowed him to move into bigger geothermal jobs. "Our company grew, the amount of men grew, and the ability to do larger jobs grew," he said. "Basically, we got bold and bid large jobs."

Architects Key to Commercial Bids

"The architect is a key ingredient in a commercial project," said Murphy. "The architect is taking some dream or somebody's idea of a building and making it into a reality. So, he's the person, when they're planning that building, you have to convince to let that customer know geothermal is an option."

Murphy said the architect has to be reached because the general public still views geothermal as a mystery, and GHPs are rarely thought of when planning construction. The hardest battle when presenting GHPs to architects may be convincing them their building is a candidate for geothermal.

"Most of them are not really receptive to the idea," said Murphy. He tries to convince the architects that nothing is required of them if they can give him some time to present GHPs to the architect's customer. "All we're asking for is a little bit of time, and we'll go in and sell it to the customer," he said.

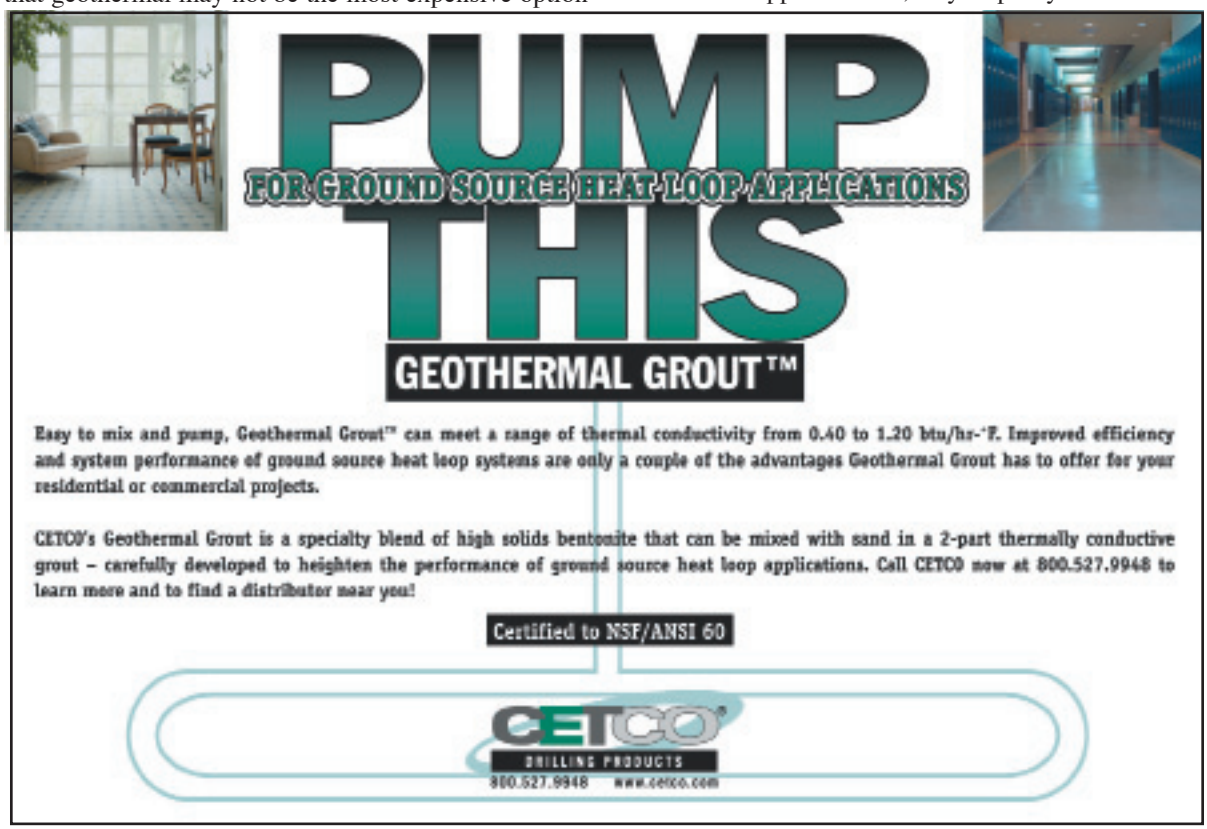
Architects often need to be shown how the GHP can fit on their site and that the system may not take as much space as they believe. Next, Murphy said showing them that geothermal may not be the most expensive option could surprise most architects. Yet, Murphy admits geothermal will still be an expensive choice and contractors have to push the economics of GHPs.

"In every single case, they can tell their customer from the very bottom, cheapest choice they could make out of all the systems, geothermal is the one that will give them the greatest return on their investment," he said.

Depending on the case, Murphy said contractors may want to present the technology to the architect's client directly or they might give the architects themselves the information. "We give architects some basic tools so they can go back to present to the customer, and be the hero," said Murphy. "They become the one who suggested it."

Making the Geothermal Presentation

Keep it simple. Murphy has buttered his geothermal bread on simple concepts to help the customer understand what geothermal is and what the payback can be. "He's got his own specific brand of sales presentation that makes sense, that just gets down to the nitty-gritty and makes sense to people," DiEnna said. "He always has had that approach. So, they're pretty successful in



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marketing or closing sales to the various entities that they try to sell to."

Murphy gives credit to his entire sales staff for believing in the technology as much as he does. Each member has a geothermal system in their own home. "They really do practice what they preach," he said. He has also allowed his staff to add to his own presentation. "My sales staff has really revised my payback presentation through their hard work and dedication to make the presentation we use today," Murphy said.

Murphy and his crew operate on the assumption most people don't even know exactly how an air conditioner works, much less a geothermal. "The first thing is whether it's some little lady in her home or if it's a board of directors, we always do the same thing," Murphy said.

So, he uses simple drawings to present how an air conditioner works before trying to explain geothermal. Then, he uses simple analogies like comparing the efficiency of cooling a hot frying pan with a fan compared to cooling it by placing it in water to help customers understand the basics of a water-source heat pump.

Murphy also said it's key to give the customer two prices, one for a conventional heating and air unit and one for geothermal. He tackles the price issue head on by focusing on the price difference between the two types of systems and using a payback analysis to show customers how much they can save each year with geothermal. "It's going to take them so many years to pay it back, and here's the return on investment, and you can't go to a bank and get a better return," Murphy said.

Murphy and his sales staff have sold 90 percent of their geothermal systems on the price difference, the years it takes to pay back the difference and the return on investment. "It's really economics," he said. "We can talk about all the benefits of geothermal like it doesn't make any noise, and there's less maintenance, but basically people buy based on dollars."

No Super Bowl Ads for Geothermal Yet

The geothermal industry needs to be innovative in finding ways to market its technology, especially since it is still somewhat of an unknown to the general public. Murphy said he thinks awareness is growing due to the efforts of several industry organizations, but until the industry can afford a GHP Super Bowl TV spot, everyone in the industry needs to pull some weight in the marketing department.

"If we spent the amount of money Budweiser spends, then everybody in the world would know about geothermal heat pumps," said Murphy. "I haven't seen any advertisements on TV, you know 'Ground source heat pumps, ground source heat pumps!'."

He said if the industry can't always market directly to the public, it may have to market to those who sell to the public. For commercial buildings or new construction, that person is often the architect. If architects are sold on geothermal, then they can push engineers to learn how to design and install the GHPs, and can influence the commercial market.

"If that architect is pushing for it hard enough, then the group of people who support him or he pays will get on because he's going to force the market," Murphy said.

Individual contractors can play a vital role in marketing by making the powerful and often uncontrolled marketing tool of word of mouth work to the advantage and not disadvantage of geothermal heat pumps. Murphy said contractors can't leave a geothermal job that doesn't work because of its devastating effects to the contractor and the industry as a whole. "Do a bad job and somebody's going to tell a 100 people you're no good," he said.

When contractors put in a bad geothermal job commercially or residentially, it's automatically assumed that the geothermal technology doesn't work, but when a regular heating and air unit fails, the blame is put on the contractor or chalked up as a bad piece of equipment,

he said. "There's a huge difference there," Murphy said. "You have to make sure that every system works and works well."

Murphy's Law of Successful Geothermal Business

Despite changing from a residential to commercial focus, the desire to make a more local-based company or the changes within the geothermal industry itself, Murphy said some things just haven't changed. Focusing on the customer, retaining good, qualified employees, and keeping the workforce trained have stayed the same for Murphy.

He said the customer is really No. 1 in almost every business. "Without them, we don't exist," said Murphy. But he also thinks getting the employee involved in and making them accountable for projects, paying a top-scale wage, and providing good benefits are the best ways to focus on maintaining quality employees. By training those employees, Murphy said he is able to provide quality work.

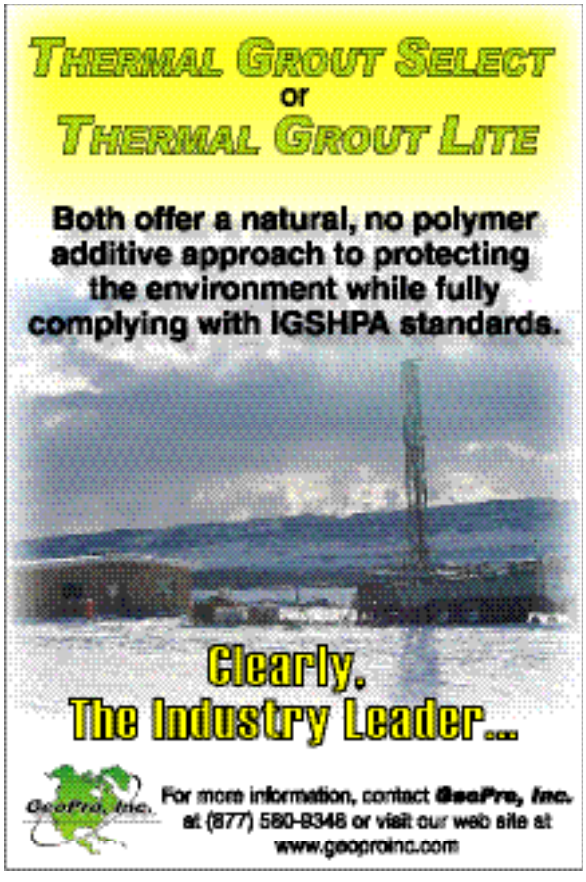
"Keeping your workforce trained, specifically the technical workforce trained and up to speed on all the equipment, allows us to do a good job," he said.

A Trait That Can't Be Taught

But the top thing for Murphy is a little less tangible and a little less teachable than how to manage customers or the workforce. "No. 1 is love the technology, believe in the technology, and feel like by offering it to our customers, we're giving them something really good and better than anybody else can," Murphy said.

After all, Murphy left his job as an aeronautical engineer in the 1970s to chase a technology that didn't even have much of an industry at the time. Loving geothermal technology and what it can do coupled with a penchant for doing things right is keeping Murphy busy with geothermal projects today, even after scaling down to just the local market in Oklahoma.

Murphy began with one truck and the manpower of his own two hands. Today, he said his company owns more than 30 trucks and employs more the 50 people. "We probably run anywhere between 20 and 30 geothermal jobs at a time. That's where we are today, and we did it on geothermal," he said.



Marketing from a Manufacturer's Standpoint

By Kathryn Jones

I sat down to talk with representatives from four major heat pump manufacturers about how they promote their business and geothermal technology. The following were our conversations.

How does your company market geothermal?

Van Bourn, Vice President of Marketing & E-Commerce, ClimateMaster:

We are contacting architectural communities, which leads to visits with mechanical engineers. We are stepping out to reach green-market communities. This market contains architects and those that promote the environmentally-friendly designs. We also support efforts in print and direct mail pieces. This involves networking within the community. We market geothermal products via trade shows, trade publications, sales channels, and professional organizations in the architectural and engineering communities.

Chris Smith, Vice President of Sales & Larry Eitelman, Utility and Government Relations, Florida Heat Pump Manufacturing:

Residentially, we market through wholesalers and distributors in Canada and United States. We also have sales and training seminars, too. Commercially, we use independent representatives to promote our product then they contact architects and engineers to promote.

Beth Braddy, Product Manager, Trane:

We have a number of materials–products, sales

pieces/folders, and our distributors have access to them to promote geothermal. Dealers have the opportunity to advertise on billboards with Trane and Command-Air brands. Trane will partially underwrite the cost of articles and advertisements for dealers/distributors to help motivate them to advertise the system. We not only are sold through dealers, but also a number of commercial sales offices, too.

Bruce Ritchey, President, WaterFurnace:

It's really three-tiered. First, with homeowners, we have a full array of advertising approaches –TV, radio, national magazines, regional publications, local newspapers, sponsor radio talk shows, direct mail using mailing lists, very active Web site, full annual press release plan, trade and home shows, builder shows/meetings and other events. Second, with dealers/distributors, we try to find a good contractor that will sell to homeowners. In areas without good penetration now, we are looking for distributors who would look to set up contractors who would in turn sell the homeowners. Sales representatives ask utility people and other distributors what names of people are good and would do a good job for us, and then we screen them. Third, with institutional, we use telemarketing calls, direct contact, and also watch projects that are in the planning stages and make visits to the sites.

What are you doing to develop the market?

ClimateMaster:

Education is key. In marketing geothermal products, we need to remove the obstacles that have plagued the technology for years by educating more effectively and providing technical support. Therefore, we as a company are investing more in education and training. When we create an environment that makes it easy to select, specify, install and purchase a geothermal heating and cooling system, we will move the needle toward a greater share of the market.

FHP:

Regional people call on utilities to help promote geothermal, whether retrofitting or new. We rely on distributors to work with architects, engineers and developers. In addition, we work through our regional people and conduct introductory seminars as presenting IGSHPA contractor accreditation classes for the contracting community.

Trane:

Traditionally, geothermal is a single-family home, purely residential. Now we are seeing large residential projects like barracks. It's sold purely on efficiency aspect of the systems. This makes it a really easy sale because of the efficiency.

WaterFurnace:

All marketing efforts are to help the awareness of geothermal and to elicit responses from people so we can tell them the story and get them excited and get more installations done.

What are the challenges of marketing geothermal verses widgets?

ClimateMaster:

The geothermal technology is still considered to be on the "bleeding edge" of heating and cooling systems. The application requires authentic science and engineering skills, which unfortunately are absent on too many installations. Also, selecting a geothermal system is often based upon a belief system of doing what is good for the environment. The public needs a better vision of the greater good to overcome the lack of commitment to earth-friendly products even when they cost more.

FHP:

It's the hardest for people to listen. They can't believe the efficiency. We market by pointing our cost of operation savings, safety, cleaner atmosphere, both in the structure and in the atmosphere. Commercially, it's more accepted in schools. IGSHPA and GHPC do great jobs

Photo courtesy of ClimateMaster

The ClimateMaster plant in Oklahoma City, Okla.

marketing to schools.

Trane:

Two things: Availability of land and availability of accredited loop installers locally. If there are no accredited loop installers locally, it's expensive to try and find someone to bring to you. And in some parts of the country, homeowners have very little land for their homestead, which prevents this from becoming more mainstream. It makes geothermal harder to achieve for the less affluent homeowner. It's also kind of regionally focused, so in some places, geothermal is practically unheard of.

WaterFurnace:

The first challenge is the cost. Second, it's not a conventional construction. You teach people how to do something more labor intensive with skills and tools verses conventional heating and air conditioning.

Which market do you feel is easier to penetrate–commercial or residential? Why?

ClimateMaster:

Commercial. There are more vehicles upon which to carry the message to commercial markets. Secondly, when considering first cost, there are often too many opportunities for the purchase to derail to alternative options for the homeowner via the contractor. Finally, commercial sales provide greater profits.

FHP:

Commercial due to lack of awareness in the engineering and architect community of the advantages of this system over conventional systems in operating savings, air quality and maintenance required for the system.

Trane:

Definitely residential. It's already an established system on the residential side. With commercial projects, it's still relatively new. With the up-front costs with residential, the resident is more likely to see the benefits. With commercial projects, the building owner may not keep the building so they don't see the benefits.

WaterFurance:

Residential is harder because of the penetration, and the market is broken down into new and replacement. The new is dominated by large-tracked builders. Very few are willing to spend a lot of money to have geothermal installed. That eliminates the majority of new construction from the table. Contractors that are willing to work with you tend to be about 50 homes a year or fewer. They represent a small portion of new construction market. With the replacement market, it's driven by failure installations, like when a unit is broken and needs to be installed very quickly. It requires ripping up the lawn, which makes a mess and takes longer. Financing for a replacement job is harder to find also. The larger first cost for

Photo courtesy of Trane

The Trane plant in McGregory, Texas.

geothermal is harder to finance than it is for a mortgage.

How well does word-of-mouth market the technology?

ClimateMaster:

Word-of-mouth has been the major source of leads since 1982 and remains so to this day. Twenty-two years ago, no one, and I mean no one, even knew what geothermal systems were. To this day, word-of-mouth is what keeps the residential market going.

FHP:

It's the mainstream of it. We don't really do any national advertising. For instance, the Austin Independent School System is a good example of word-of-mouth getting the systems accepted nationwide. Austin retrofitted a large number of their existing schools in a relatively short period of time, and the rest of the country saw the savings as well as the other advantages of their efforts.

Trane:

It helps a lot but only within a regional area. There are pockets of geothermal systems that are spread through the United States. The best word-of-mouth testimonials include information on how the systems have impacted their power usage, bills, etcetera. Plus, certain power companies have incentives, too, which help sweeten the deal.

WaterFurnace:

Word-of-mouth is a double edged sword. It's the best way to spread the word positively or negatively. So when a job is installed correctly and the equipment works well, it's a great way to spread the technology. But if it's installed poorly or equipment isn't working and the dealer and manufacturer doesn't stand behind it, it's a sure way to kill the market. It's extremely important that we train dealers to stand behind products when there's a problem so word-of-mouth stays positive.

How popular are your pieces of literature? How do these this help market the technology?

ClimateMaster:

Our literature is the backbone of our education and sales efforts. Diagrams, case studies and audience-specific brochures help explain the technology and provide resources for further education.

FHP:

We present our literature at trade shows and local meetings to the attendees and explain how the system works. They take the literature home and look it over. At most shows, the literature is very popular.

Trane:

They are pretty popular. Of course, the technology is such an interesting concept anyway. I know when I'm making a decision, I like to read up before I buy anything, and I think this is the case with many people. But word-of-mouth is still the most helpful.

WaterFurnace:

If people are interested, people respond to geothermal advertising. They want to know about it. It's tricky to explain and hard for people to understand, but it takes a fair amount of work to explain it to them. We find a lot of ways to do that.

How are the gas prices affecting your sales? Are they affecting the way you market geothermal?

ClimateMaster:

When petroleum product prices are up, the market is more readily responsive to alternative energy sources resulting in an increase in sales. Therefore, we make every effort to maximize marketing initiatives when these cycles present themselves.

FHP:

Certainly the higher they are, the more attractive we look. With the fuel price increase three years ago and the importance of cleaner air, the general public is more aware of the advantages of the system. This lets us present a more sensible approach to space conditions on all levels.

Trane:

There really hasn't been a direct effect on sales yet. In areas where geo is going in, it's not really primarily gas anyway. I'm seeing a lot more go to electric than gas. But anytime the power companies give incentives (to go geothermal), that's good, too.

Photo courtesy of FHP

The Florida Heat Pump plant in Fort Lauderdale, Fla.

Photo courtesy of WFI

The WaterFurnace plant in Fort Wayne, Ind.

WaterFurnace:

We think the media's attention to the energy crisis helps. It generates more leads, more interest in the technology. We tell the same story all the time. People may pay more attention to (the gas prices) when the media starts talking about it. For example, in 2000, the price of gas took a dramatic hike and the California energy crisis was all over the news. That spurred interest in geo, and it really went crazy after 9/11. The week before that, the energy crisis in California and the energy legislation was in the news frontline every day. After 9/11, energy wasn't in the newspapers for almost a year and a half. Although the price of energy continued to rise, it was just as big a problem as ever, but leads dried up. People weren't interested in an energy crisis. They just weren't paying attention. We don't believe it's the price of gas. We believe it's the amount of press of gas prices that spurs on the business.

Geothermal Makes the Grade

by Jessica Commins

Geoexchange systems are a natural fit for schools. They're quiet, clean, inexpensive to operate and maintain, non-obtrusive to outdoor landscaping and are therefore less vulnerable to vandalism. They also promote good environmental ethics to the students who enjoy the technology's comfortable space conditioning.

With all of these positive selling points, it's a wonder why every school in the country does not have one, but such an idea isn't an impossible dream. All it would take to start moving in that direction would be a strong marketing campaign, coupled with the appropriate facts about why such a change would be beneficial not only to the schools, but also to their employees, students and the community they serve.

School districts around the country have already begun to realize what a gigantic difference geoexchange can and has made for them, and their respective communities. Because geoexchange systems burn no fossil fuels, and use much less electricity than other technologies, their use slashes greenhouse gas emissions by 40 percent, according to the United States Environmental Protection Agency.

Additionally, these US schools that have switched to geoexchange save millions of dollars per year in energy and maintenance costs–funds that can be reallocated for books, computers, teacher salaries and other needs.

Photo courtesy of Vanderford and Associates

Raytown Schools' Spring Valley Elementary enjoys a 56% savings thanks to their geothermal heat pump system.

One particular school district has found geoexchange to be beneficial on so many levels that it has become a model for all those who hope to gain by following in its footsteps. The Austin (Texas) Independent School District was the nation's first school district to install geoexchange heating and cooling systems on a large scale.

Since 1989, virtually all of the heating and cooling installations in that district have been geoexchange, replacing standard heat pumps and boiler/chiller systems as the new system of choice. In fact, about 60 percent of Austin's 100 schools employ geoexchange systems. Those

schools' energy savings are estimated at no less than 25 percent, when compared to the schools in the district with conventional systems.

Convincing school districts to choose geoexchange has been proven by many industry members to be a rewarding venture. However, the marketing skills involved in successful sales often enlist a few simple techniques.

Districts in Need Find Solutions with Geoexchange

Michael Fischette of the New Jersey-based Concord Engineering Group has found the school market to be a receptive recipient of geoexchange technology. His firm has been working in the HVAC market for more than 15 years, and in that time has installed geoexchange into more than 40 schools. Of those, all schools he has worked on in the past three years have either met or exceeded LEED requirements, and two of those schools have been given the highly esteemed LEED Gold award.

"I have always had a personal interest in efficiency and looking to reduce electric costs," says Fischette. "Geoexchange provides my customers with that."

In his experience, Fischette has found that the best way to find schools that would become his customers is to seek out districts that either need HVAC equipment, or are in need of lowering their operating costs. When he started working with geoexchange 12 years ago, the educational barrier and initial cost of the systems made the marketing more difficult than it is for him today. However, with a detailed life cycle cost analysis and a state-issued rebate, he was able to overcome those barriers with flying colors.

Photo courtesy of Concord Engineering

Neptune Community School is reaching beyond New Jersey's requirement for high performance designs and is aiming for a LEED Gold rating.

"We had to move school districts away from the idea that the lower first cost is the best factor to figure," says Fischette. "And with the New Jersey rebates, many really talented geoexchange contractors came into our area, which lowered the initial installation costs. Today, the cost of a new geoexchange system is cheaper than a four-pipe chiller system."

By showing people how this economic alternative could work for them, and often offering performance contracts to help them finance the systems, many of Fischette's New Jersey schools have chosen to go geo and enjoy the peace of mind that comes with that choice.

"It's just a common sense decision for schools," says Fischette.

Winning a "Yes" from the School Board

Another industry member who has found great successes with schools is John Vanderford, Ed.D., president and chief executive officer of Vanderford and Associates, who worked in the educational sector for 25 years as a superintendent of schools and as a facilities manager in Nebraska and Missouri school districts. When it comes to knowing what a school needs to hear to say "yes," Vanderford has been on both sides of the table.

"Lots of school boards are made of people who don't understand why something like this can cost so much money when they're looking to heat and cool all of their district's schools," says Vanderford. "Now that I'm the one selling the systems, I remember that I always need to keep it simple, break it down into numbers that matter to them, and show them how this technology will work for them."

Dr. Vanderford was instrumental in making the first installation of a geoexchange system in a Missouri K-12 school district happen in 1989. Since then, he has personally been involved in the installation of systems into 32 schools in 10 different districts. He attributes much of his success to his strong network of contacts,

but also gives credit to the technology's benefits.

"They really sell themselves," says Vanderford. "It's just a matter of plugging away and making sure people know that this is something that works and saves people a lot of money. You really have to believe in it to sell it."

However, persistence is key to growing a geothermal heat pump business. Vanderford warns that some school jobs can take one to two years to develop, and can take the school board a year to decide to go geo. Patience and hard work often pays off for him, though, as is seen in his upcoming projects. Vanderford and Associates has four schools that have been or will be finished this year, and four more that will get started either this year or next.

In fact, hundreds of schools around the world are starting or will be completing geoexchange installations every year. Anyone in the industry can be a part of that success rate. Both Vanderford and Fischette insist that the person who's doing the marketing needs to believe in the technology and needs to be able to break down the sometimes-difficult numbers into simple facts that really speak to the schools.

The solid proof that schools should choose to heat and cool their buildings with geoexchange is evident in current statistical figures. For example, the electricity required to power 1 million homes for one year would be saved if every school in the United States that could use geoexchange did so. Also, replacing conventional equipment with geoexchange systems in all applicable

Photo courtesy of Vanderford and Associates

Raytown Middle School won the 2003 Outstanding Mechanical Installation Award from the Mechanical Contractors Association of Greater Kansas City.

U.S. schools would provide benefits equal to planting more than 8 million acres of trees, reducing the need for more than 61 million barrels of oil, converting more than 37 million cars to zero-emission vehicles, and saving more than 2.6 billion gallons of gasoline.

The benefits of geoexchange are so numerous that they often do sell themselves. However, they need the help of an experienced and devoted industry in order to keep the installations as quick as the rate at which people are requesting them.

"There's plenty of work out there," says Vanderford. "I could sell three times more than we do, but we need more contractors to make them move because people want it, and we want to give it."

In the News

ClimateMaster Receives Awards

By Kathryn Jones

ClimateMaster has recently received numerous awards for its performance and products.

The company received a Certification Program Performance Award from the Air-Conditioning and Refrigeration Institute (ARI) for achieving a 100 percent success rate. This is the third consecutive year that ClimateMaster has received this award. ARI's standards and certification programs are recognized and specified internationally, and the institute independently verifies products through an annual testing program. This works to assure customers that they are purchasing a valued product. The institute's certification programs are open to all manufacturers of HVAC products.

Dan Ellis, president of ClimateMaster, said his company strives to design and manufacture heat pumps at the highest levels of performance and quality. "We believe the ARI certification program is crucial to maintaining an unbiased environment for consumers to conduct product comparisons," he added.

The company has also been presented with two other awards for its latest product, the Tranquility 27. The second annual HVAC Comfortech Product Showcase Awards recognized the product with its Best of Show award. Winners were selected based on the ease of use for the HVAC contractor and on design functionality.

ClimateMaster also received a bronze medal for its Tranquility 27 at The Air Conditioning, Heating and Refrigeration News' first-ever 2004 Dealer Design Awards. According to the publication, more than 150 products were submitted for consideration by manufacturers, and each entry was reviewed and scored by five independent contractors. These contractors focused not only on design features that assisted in installation, maintenance and service, but also looked for quality and performance variables. The Tranquility 27 was recognized alongside brands such as Bryant and Aprilaire.

"We were honored by the recognition from our industry for designing and manufacturing the Tranquility 27 product line," Ellis said. "Not only is this product line easy to install and service, but the performance rating has raised the bar on energy efficiency and environmental safeguards for residential heating and cooling systems."

UK Geothermal Organization Launched

By Dara McCoy

Better late than never could have been the theme as the United Kingdom Ground Source Heat Pump Club held its inaugural meeting Oct. 6, 2004, hoping to be the forerunner for exciting things in geothermal for the UK.

"We are still in the very early stages in the UK," said Robin Curtis, technical manager for EarthEnergy Systems, who is taking part in the organization's development. "We are orders of magnitude behind the scale of operations in both North America and some of the other Northern European countries."

Curtis' interest in forming a UK association was first sparked in Sparks, Nev., at a Geothermal Resources Council Meeting in October 1991. "I remember coming away from the meeting wondering why there was this burgeoning activity in the U.S., and yet, I was completely unaware of any such activity in the UK."

However, being behind isn't quelling expectations or potential for the organization. If anything, it's giving a sense of urgency that Curtis outlined as a main point in his presentation at the inaugural meeting.

"We will not have the luxury of evolving GSHP

design, installation, training and practices over the extended period that other established North American and Northern European GSHP countries have taken," he said. "We have to deliver up-to-date, high quality, long-lived, modern GSHP installations now."

The first meeting was hosted by the National Energy Foundation at Milton Keynes, just north of London, in their new GHP equipped building. Recently awarded funds from the NEF are making the formation of the UK GSHP Club possible, said Curtis.

"We envisage that this will be a forerunner to a UK trade association with the responsibility for raising awareness in the UK, developing standards and possibly training, liaising with other relevant trade associations, professional bodies, and regulatory bodies, and lobbying government," he said.

Curtis said the first meeting was a full day of programs designed to update attendees with the developments and opportunities in GSHPs in the UK with the final session set up for open discussion on what they would like to see from a UK GSHP Association.

"It was very positive, and we believe that it went well," he said. "We will now have to see how many players decide to join up and how to take it forward."

Heating Bills Projected to Rise This Winter

By Dara McCoy

U.S. households using heating oil, natural gas and propane to keep their homes warm this winter should expect to see higher heating bills as a result of increased fuel prices and colder weather, according to the Energy Information Administration's Short-term Energy Outlook released Oct. 6.

Natural gas consumers will see a 15 percent increase in bills, propane users a 22 percent increase, and heating oil customers can expect a larger increase of 28 percent, said Guy Caruso, EIA administrator. Caruso said some consumers, especially propane and heating oil users, depending on where they live and weather conditions, will have already seen higher bills in October.

The EIA uses the price of fuel and the National Weather Service's forecast for this winter compared to last year's actual winter heating fuels expenditures to measure the expected increase in its projections for 2004-05.

In the Midwest, where two-thirds of the homes are heated by natural gas, the typical household using that fuel will pay $1,003 this winter compared to $870 in 2003-04. In the Northeast, where 80 percent of the homes use heating oil, typical expenditures may reach $1,223, up nearly $300 from $953 last winter. The Midwest and South region was used for propane comparisons, and customers who use propane can expect to pay $1,396 compared to $1,147 last year.

"The reason heating oil prices are up so much is because global crude oil markets are very tight, and prices are up for crude oil on the world market," Caruso said. He also said the United States is feeling a more immediate impact from hurricanes in past months, which have impacted domestic production of some heating fuels.

"We had a large number of offshore rigs that produce oil and natural gas in the Gulf of Mexico evacuated during Frances and Ivan," Caruso said. "There's still a fair amount of oil and natural gas that's not being produced (as of Oct. 6) because of the need to make repairs on those rigs."

As of Oct. 5, crude oil prices were at $49 a barrel. Caruso said the EIA predicts prices will ease in the second half of next year, but will remain higher than last year's $30 average per barrel. Caruso said they predict oil prices dropping below $30 by 2010, but still not reaching the lower prices of the 1980s or '90s.

"We don't see very high prices staying in the long run but they still are going to be high by historical standards," said Caruso. "So, it seems to me the more efficient use of energy, whether it be for heating or other forms of utilization, makes a great deal of sense now more than ever."

The EIA November energy outlook, to be released Nov. 5, and a long-term outlook through 2025, to be released in late November, can be found on their Web site at www.eia.doe.gov.

Slim Jim Tips the Scales

By Kathryn Jones

Hard headedness, a stick-with-it-attitude and a little help from a new product have helped make Alan and Barbara Watts' family business successful.

Founded in 1984 by CEO Alan Watts, AWEB Supply is a small, independent distributor of a full-line of geothermal products. Plus, the company is dedicated to providing solely to the geothermal industry. "We have tried to keep AWEB relatively small by being strictly a geothermal supply company," he said. "Under the circumstances, we've done rather well."

One could think that "the circumstances" could be the business' lack of staff members, but this is certainly not the case as AWEB provides not quantity but quality assistance to the geothermal community. They have four full-time employees, but with over 40 years of combined experience in geothermal technology involving both residential and commercial applications, AWEB can certainly call themselves qualified to handle any geo-

Photo courtesy of AWEB

Alan Watts poses beside the Slim Jim, which was named after the late Jim Smith–an AWEB prospective business partner.

Photo courtesy of AWEB

Barbara Watts is hard at work at AWEB.

thermal problem. To top it all off, there are two Certified Geoexchange Designers on staff, who are available to provide their customers with excellence when it comes to geothermal design.

Starting a Business unlike Tom, Dick and Harry's

In 1984, a good friend of Watts worked for a supply house that was having management problems. He approached Alan about going into business together, and the two started sub-distributing through another company and supply house. "My friend got disenchanted with the new things that were coming out with geothermal," Watts said. "We decided maybe we ought to open our own supply house. His name was Alan Webber, so we named the supply house after him." The two had been with a major manufacturer for a number of years and due to, what Watts calls "some quality control problems," they opted to investigate another source for equipment. "We had to take care of our business as well as take care of our clients," he said. Watts expressed an interest to a WaterFurnace territory manager about wanting to become a distributor of their products. The manager in turn expressed an interest in doing business with Watts. "The next thing you know, I had a WaterFurnace distributorship," Watts said.

AWEB has experienced a nearly 30 percent per year growth since 2002 in the company's WaterFurnace products. Watts said the business will not tap into other markets. "I have a lot of faith in geothermal," he said. "It's a proven application. We're not out to compete with every Tom, Dick and Harry business out there. We're going to concentrate on one field and give it the attention it deserves."

Success with Problems

Watts said that his success in the geothermal market can be contributed to "our dedication to energy conservation." He said, "When problems arise in the field, we've found solutions."

Some of these problems came about during the time Watts was starting up his business. "In the early 80s, with geothermal, everyone was jumping in," he said. "There were lots of negative things taking place. Whenever the contractors started jumping in and tried to put the systems in, there really wasn't enough knowledge of design about how much loop was really required. You had a lot of systems going in with short loops. With that came problems, and the more problems you had, the less attractive it was for other folks."

"Through our hard headedness, we stuck with it," Watts said. "We've stuck with geothermal and have moved forward with it by staying on the forefront of the industry. We want to do as much as we can to help develop this industry." Watts said he is also concerned with doing things right the first time when it comes to fixing problems. "We were studying and figuring out what had to be done to do things right. And in doing it right and doing a little bit more than we thought we needed to do in order to ensure it was right. It's really about taking pride in what you're doing."

The Slim Jim

AWEB sells an alternative to lake loop polyethylene pipes with their newest product, the Slim Jim Geo Lake Plate. The Slim Jim is a heat exchanger using lake loop technology. AWEB touts it as being the only simple, labor-friendly alternative to polyethylene lake loops for fluid-to-fluid heat transfer in water-cooled refrigeration and air conditioning equipment. The company also claims the plate can be used for stainless steel construction and is easy to install.

"I'm not taking credit for it," Watts said about the invention of The Slim Jim. It all came about from one of Watts' competitors, Jim Smith. Watts looked at the

Photo courtesy of AWEB

Gene Schexnayder, inside sales for AWEB, shows off a 10-ton pond loop Slim Jim assembly.

idea and promised to do the financing of the product through AWEB. He did notice one minor problem with it, however. "The design of it wasn't friendly because of the pressure drop on the water flow through the exchanger," Watts said. The product was redesigned in order for it to be friendly to the industry. "It didn't take very long," he said. "We looked it over and saw what needed to be done in order to reduce the head loss of water flow through it. In doing so, we adjusted the pillar height on the plate itself and the actual past design for the water flow to flow through it."

However, while Watts and Smith were discussing starting their business together, Smith was diagnosed with lung cancer. "He had an operation, and we thought it had been a success," Watts said. "But Jim developed a fluid, and it was found that fluid was cancerous. He went to the doctor and told him about his wanting to start up another business with me. The doctor told him no, that he needed to get things straight first. It wasn't very many months later that he was no longer with us."

Watts wanted to move forward with the product, but he felt like he wanted to ask Smith's wife first. While the two potential partners had discussed going into business together, Watts said they did not have a name for the new product. "We were coming up with all sorts of ideas," he said. After Smith died, Watts said he wanted to pay homage to his partner. Watts said, with a great deal of admiration in his voice, "Jim was very smart–a very good and knowledgeable man in the geothermal field. I had a great deal of respect for him. He was also a rather large man, so we named the Slim Jim after him," Watts said.

The product has helped the AWEB business a great deal, Watts said. "One dealer, especially last year, his sales in geothermal doubled. In fact, 80 percent (of sales) were a result of the Slim Jim. You can do projects a lot quicker because of the installing process, and you don't have to install pond loops," he added.

Marketing Tips

Watts said targeting your audience is the most important part about marketing a new product or business. "It's really important for young, new companies to find a niche in the market in order to establish itself," he said. "Basically, what worked best with the Slim Jim was to target the industry that was associated with the product. Rather than the shotgun approach, we took–I guess you could call–a rifle approach. We watched our dollars and tried to get optimum exposure out of each dollar we spent and took advantage of free advertising and anything else we could possibly get." He added that people must "target the decision-makers of a business that would utilize your product or business. Don't go and try to target someone who would just recommend it, but the decision-makers themselves."

Watts added that when he started out promoting the business and the Slim Jim, he had to watch his finances. "We rode around in the back of a pickup truck or in a trailer with signs on it so that it was free," he said. "The first IGSHPA conference we came to we didn't even have a booth. We just had our truck out in the parking lot. We were cheap."

Watts has been marketing the product to geothermal audiences such as IGSHPA and the GHPC, but he is also targeting energy conferences as an exhibitor. He said he doesn't think the marketing part has been difficult for him. "Getting this product into the industry hasn't been too hard because it's fun," Watts said. "I'm working with something I believe in, and when you have a product that you believe in, you should be having fun marketing it. When you do that, you can grow and feel a sense of accomplishment in what you do by helping people."

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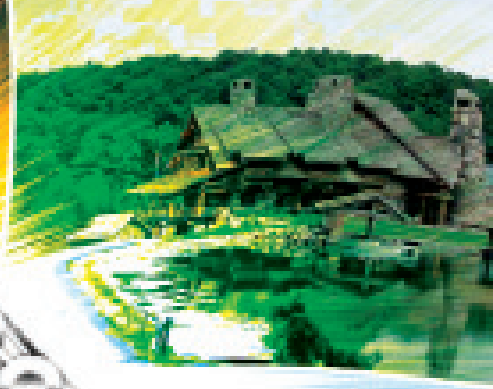

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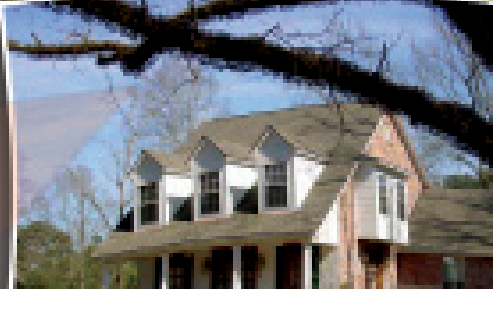

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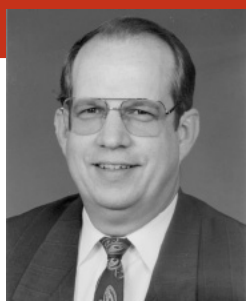

By Phil Rawlings

If you have a question about geothermal installation, design or troubleshooting, send it to Phil Rawlings in care of *Geo Outlook*, Oklahoma State University, 374 Cordell South, Stillwater, OK 74078 or via e-mail to insight@igshpa.okstate.edu.

1. How do you "get your foot in the door" on government geothermal projects?

There are at least three ways:

a. Federal Geothermal Energy Savings Performance Contracting program: Contractors in this program have been pre-qualified and are selected based on qualifications, and the program is currently in operation. This program is closed unless it re-bids.

b. Utility Area Wide Agreements: Facilities contract with utilities for projects, so the utility would be the point of contact.

c. Bidding: Some projects simply go out for bid.

2. Are there differences between codes/regulations on government facilities versus non-government facilities?

Maybe–sometimes local codes govern. At other times, local code authorities have no jurisdiction. Don't assume. Check and verify.

3. How do you market geoexchange to the government?

Like any conventional customer, you must satisfy their needs. Key points are life cycle costing benefits, energy savings, maintenance cost reductions, and environmental considerations.

4. How can you get past the rules, regulations and extra bidding processes that go with government projects?

You can't! They have strict procedures that must be followed and requirements that must be satisfied. Learn to abide by their procedures and requirements, or do business elsewhere.

5. What is the market potential for government projects?

HUGE! The federal government owns approximately 3 billion square feet of facilities and leases approximately 350 million more. The Department of Defense utilizes approximately 67 percent of this space. All are seeking to reduce energy consumption, maintenance costs, etc.

6. What are some marketing hurdles that geothermal must overcome?

Primarily, it is just like the open market–first cost, understanding the benefits of the system, accepting change from what they are used to, etc. However, the responsibility in the military is diversified and does present a unique challenge. There are facilities managers (commercial type buildings), family housing managers, energy managers, and others that must be sold. When you sell one, that means you only have two or more to go to get a project going.

Mr. Rawlings has over twenty-five years experience in the geothermal industry. He is a Certified Geoexchange Designer (CGD) and an IGSHPA Accredited Installer and Trainer.

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