Strategies for Success

What business practices do whole-house contractors need to consider adopting in order to see strong growth in the coming year?

by Bob Knight and Gregory Thomas

Whole-house contracting businesses, which implement comprehensive solutions for performance problems that include a combination of HVAC and building shell improvements, are rare breeds. And successful whole-house contracting businesses are rarer still. But they do exist, and they provide models to live by.

To ferret out the secrets of their success, we conducted a survey in mid-2003 of some of these businesses. The survey was conducted in two stages: a broad-based online screening survey with about 120 respondents, followed by detailed phone interviews with 16 selected contractors. (Information on one of the contractors came from public information outside the phone interview.) This work was undertaken as a part of a project funded by the California Energy Commission's Public Interest Energy Research (PIER) program to identify best practices and suggest approaches for encouraging retrofit home performance contracting in California.

LAURA BECK

Contractor Jon Harrod of Performance Systems Contracting discusses home performance potential with Megan Pugh and her daughter Ceili at their home in Ithaca, New York.

Clarifying Performance

The terms "home performance" and "whole-house" are closely related but have distinct differences in meaning to us. Home performance refers to contractors who use performance testing as a part of their business process but do not necessarily complete both shell and HVAC improvements. Whole-house contractors install comprehensive workscopes, delivering both shell and HVAC improvements using either their own crews or subcontractors. Whole-house contractors do home performance work, but home performance contractors may not be doing whole-house work.

The screening survey was promoted to lists obtained from Affordable Comfort event attendees and from the 500 users registered at www.buildingperformance.net. Roughly 2,000 e-mails were sent out, and after eliminating incomplete responses and the occasional curious program manager, 118 contractors remained. The response to the survey was surprisingly geographically diverse, including contractors from 35 states, the District of Columbia, and Canada.

The screening survey was followed with detailed phone interviews and discussions with the 16 contractors deemed most clearly successful and committed to building science-based methods (see "Contractor Characterization," p. 27). Success was defined as being able to operate for at least two years as a home performance contractor with the majority of the income coming from performance-tested work. The contractors interviewed were also selected to provide representation across a range of company sizes, business models, and geographic locations. Fourteen for-profit businesses and two not-for-profits that provided fee-for-service home performance services were included. These interviews collected information on business practices, marketing practices, technical practices, contractor perception of consumer concerns, and sources of training information. The interviews averaged more than an hour long. All contractors agreed to participate without subsidy.

Origins of Home Performance Contractors

Contractors come into home performance from a variety of sources. The starting point for each contractor influences what the next step is on his or her pathway to home performance. Almost all the contractors interviewed had received training or work experience through some type of energy efficiency program. Many of the contractors had previously been involved with utility energy programs or the Weatherization Assistance program (WAP) and had acquired some level of testing skills in those programs. Understanding and experiencing the usefulness of performance testing appears to have made it easier for these contractors to consider adopting a new business practice based on testing. As one respondent said, "I'm a believer! I did well in home improvements and weatherization, but whole-house retrofitting is the future of my business now."

Most of the contractors interviewed started as shell contractors. The show of interest on the part of shell contractors, both large and small, may be due to a desire to differentiate themselves in a market where quality and margins are constantly threatened by a low cost of entry. Regardless of the size of the company or their level of experience in home performance, there was a strong tendency for these contractors to subcontract some or all of the HVAC work that they generated as part of their whole-house inspections. The smaller companies were all either general contractors or were shell specialists subcontracting HVAC work.

Two of the start-up contractors with the highest growth rates brought the HVAC expertise and installations in-house with their own shell work. One of the larger shell contractors had merged with an HVAC company to offer whole-house workscopes. In the interview group, there was only one HVAC contractor who had adopted shell work into his business; the focus of that business was performance warranties on new construction. From the online screening survey, it also appeared that there were few HVAC contractors who were doing significant amounts of performance-tested work, and fewer still who had progressed to offering whole-house solutions. Yet adopting whole-house approaches represents a significant financial opportunity for HVAC contractors.

Another example of contractors moving toward whole-house service delivery came from survey respondents in some regions who indicated that some HVAC contractors are starting to insulate attics as a part of treating the attic-based duct systems. Air sealing and insulating walls or using cellulose as part of strategic dense-packing may not be far behind for these contractors.

Larger remodelers also have skills that may make it easier for them to adopt and manage the complex, multitrade business process of home performance contracting. As one formerly exclusive remodeler says, "I did $1 million a year as a remodeler; after getting into home performance retrofits, my business is over $4 million and growing. I'm getting pretty picky about taking remodeling jobs now!" One of the most successful contractors contacted—a former remodeler—attributed his achievements to combining the multitrade approach with a sophisticated marketing and sales effort. Still, more information is needed on the potential success of remodelers in making this transition.

Transitions to Whole-House Contracting

Once contractors start down the path to home performance, what are the key steps that can increase their chances of success? What are the barriers that they might expect to encounter?

Across the range of the online survey and the phone interviews, we see three stages of contractor involvement with performance testing and building science. These are

- performance testing with conventional limited workscopes (e.g., HVAC);
- performance testing with broader workscopes and subcontracting of other trades; and
- an integrated whole-house approach with all services offered in-house.

Acquiring the ability to offer a broader workscope requires contractors to move from simply performance testing within their own specialty into partnerships with other trades. Only when a contractor makes this move will he or she get the business benefits of larger, broader jobs and the marketing benefits of providing greater value to customers. The third stage provides additional value, as most or all profits are brought in-house.

Larger, broader jobs should also mean that the contractors are having a greater impact on the performance of their customers' homes. As a result, the capability to do these larger jobs may help contractors create a stream of larger jobs as their satisfied customers make referrals and bring in customers who expect the project to consist of more than just replacing a furnace or insulating an attic.

Inspection Fees Help

The majority of contractors interviewed did detailed home performance testing as part of the inspection estimate process. Most charged for this testing, with charges ranging up to $250; they did not want to encourage curiosity seekers by offering a free inspection. Most commonly, contractors reported charging around $100, both inside and outside any local subsidy programs. The inspection fee was used primarily to prequalify the customers as serious, typically with specific problem-based motivations, such as health issues, high bills, or uncomfortable rooms. The inspection fees charged by these contractors usually did not cover the actual cost of the inspection and were not considered a primary source of income, except for a couple of the smaller diagnostic-only contractors in areas without program subsidies. Some part—typically the larger part—of the actual inspection cost thus became part of the contractor's overhead, to be recouped in installation project prices. The typically high sales rates for home performance projects make this strategy possible and fair to all.

Free inspections can still be effective in some situations. Several contractors, located in areas with strong home performance or energy program marketing, did offer free inspections. These companies were operating in areas with home performance related subsidies and had strong customer bases or whole-house competitors offering free inspections. Free inspections would be linked to other extra efforts to screen

customers, such as prequalification for financing and making certain that all decision makers would be at the home for the inspection. The only other exception to a direct-charge model was the one contractor who focused on new construction; he included the cost of testing in project bid pricing.

Still other surveyed contractors offered inspection-only services without installation or general contracting; these charged the full cost of their inspections—from $450 to $650—since they had no other source of income. This limited their markets. One inspection-only contractor included postinstallation inspection as part of the initial fee; others included supervision. These are excellent practices, but they force the inspector's price even higher. It is essential for contractors starting out in the home performance process to understand the relationship between the inspection fee, the number of customers, and the closing rate on jobs, so that they can find the sweet spot at which their total income (inspection income plus installation income) and their profit are maximized.

RICK CHITWOOD

Home inspections often reveal insulation failures caused by other trades—in this case a cable installer.

Relationships Sell Jobs

According to the contractors, customer relations and customer education are what sell jobs, not good blower door testing or good HVAC analysis. A number of the surveyed contractors pointed out that the customer is spending money based on an anticipated relationship with the contractor, not just the equipment or the results of the testing. Still, the hands-on objectivity of the whole-house testing process tends to support the development of trust, as the customer can actually see the results of the testing. For example, the customer can be asked to accompany and help the inspector with small tasks, such as recording measurements or looking for air leaks during a blower door test. This process not only demonstrates the inspector's competence and sincerity but also permits the customer to physically see, and so to believe in, the problems in the home. This increases their confidence in the process and the value of the proposed work. As one of the contractors says, "It hasn't been unusual to get $15,000 jobs just on the basis of our home inspection and testing."

No direct sales effort is needed during the inspection process. The sales step is typically a separate later visit to provide results and cost estimates, although the customer is often already sold on the project because of the inspection experience. Typically, after three to four hours of going through a house, everyone needs a break. On average, contractors took five to seven working days to get back to the customer with a proposal, although this period varied widely in the sample. One very successful contractor develops a proposal in front of the customer, using a two-person inspection and sales team. Two contractors provide reports the same day, although they described these reports as more of an estimate, with building energy modeling occurring after the sale. New contractors were more likely to have to take the work home and then make a separate visit to close the job.

Referrals from an existing satisfied customer tend to help contractors establish a trust relationship with a new customer. The most successful contractors used this approach. Who wouldn't want to call the contractor who could elicit this kind of testimony: "We're really happy we had this work done! Our utility bills immediately went down 30%, the house was cooler, and our son's asthma got better after we got the house fixed." Other valuable sources included well-informed friends, independent home inspectors, and program marketing by reputable allies such as a state agency or a utility. Advertising in the Yellow Pages was not considered by the interviewed contractors to be an effective marketing tool; they said it was too impersonal.

Often customers balk when the expanded whole-house proposal is being presented and the price tag is higher than they thought it would be. Being able to offer financing right at the customer's kitchen table is a huge help to closing the sale, regardless of the interest rate on the loan. A number of the contractors in agency-subsidized programs pointed to their exclusive access to discounted or readily available financing as an important part of their ability to expand their business. Outside those subsidized programs, most of the interviewed contractors used HVAC manufacturer or supply house loan programs or accessed unsubsidized Fannie Mae loans through a local utility or other facilitator. In some areas, contractors and local banks collaborate to allow contractors to originate loans, and the Fannie Mae process also works in this way.

Answering the price objection with financing may not mean that the customer actually uses the financing. It may simply address the customers' initial concern that they may not be able to afford the project. After customers have convinced themselves that they want the work done, they often find other sources of funds.

Higher closing rates have been promoted to contractors as a benefit of home performance in some programs, but the evidence from the interviews shows that contractors can succeed with a lower closing rate if they are careful to monitor their profit percentage on jobs. A majority of the contractors reported

job closing rates of over 50%—far better than in typical conventional jobs. However, some larger contractors were successful at generating enough work and profits with free inspections, despite much lower closing rates. These contractors are apparently using higher gross profit margins to compensate for the overhead of doing more inspections that do not result in installations. We note that this model appears to be less economically efficient; the extra cost of many unproductive inspections must be borne by the fewer customers who have the work done. Additional effort in customer prequalification helps contractors to address this issue and to increase the closing rates.

The Basic Testing Package

What are the technical practices most commonly used by successful home performance contractors? Contractors doing inspections reported that they typically spent three to four hours doing the inspection. When travel, analysis of the inspection data, pricing, and proposal development are all figured in, contractors typically reported spending a full eight hours on the inspection and development of the proposal for a customer. Listening to customers and addressing all their performance-related needs may take even more time, but it can also lead to larger jobs.

Some of the contractors incorporated some of the preretrofit diagnostic tests into the installation, rather than performing the full inspection upfront before developing their proposal. This can limit the amount of information a contractor is working with and can lead to unpleasant surprises for both the contractor and the customer during the job.

However, it does make sense to limit testing of systems that are known to need a high level of work, such as poorly designed distribution systems that cannot even perform well enough for the testing methods to work. A good change order process is probably important for contractors encountering this situation.

The use of blower doors, duct testing of some type, and combustion safety testing were the most common test procedures. Actual measurements of coil air flow were not common. Duct-testing practices were regional, due to variations in duct location relative to the outside. In the North, for example, ducts tend to be in basements, while in the South they tend to be found in attics. Carbon monoxide safety testing was a strong part of most contractors' testing protocols, as were combustion appliance zone (CAZ) pressure testing and combustion appliance vent pressure testing. Ventless combustion appliances are considered dangerous, and most contractors interviewed were ensuring that ranges and ovens had at least an operable exhaust vent in the area. Combustion equipment was seldom tested for efficiency. Among the contractors interviewed, replacement recommendations for combustion equipment such as furnaces and water heaters tended to be made based on the age and condition of the equipment, rather than on its tested efficiency.

Air Distribution

There was a general trend among the contractors interviewed to avoid doing detailed testing in (during a preretrofit inspection before the job is sold) that could be done during the installation process. A good example of this was duct testing. Testing in with ducts was less common than testing out, apparently because of the common—and usually correct—assumption that most ducts are

Contractor Characterization

There was substantial variation among the contractors we interviewed, so we divided the group into three size categories. Ten of the successful contractors chosen for the more detailed survey were considered large, with estimated annual sales of approximately $500,000 and above. Two contractors were considered medium, with annual sales between $100,000 and $500,000. Two contractors were considered small, with sales of under $100,000. These smallest contractors primarily provided diagnostic and construction management services without becoming the general contractor. The remaining two were not-for-profits that offered fee-for-service home performance services.

Before branching off into providing whole-house services, 10 of the 16 contractors had already gotten established in a conventional specialty. The remaining 6 contractors were home performance startups; they did not have an existing contracting business before they adopted home performance testing as an integral part of contracting. Two of those startups were now considered large, and both had experienced rapid growth. Both combined a focus on HVAC installations with in-house shell work.

Eleven of the 16 were from heating climates, such as New York, Wisconsin, and Vermont. (New York and Wisconsin have long-standing public-sector support for home performance and therefore have more contractors who have gotten over some of the bumps in the road.) The remaining 5 contractors were from Texas, Arkansas, North Carolina, and California.

Seven of the contractors were whole-house or full-service contractors, offering some combination of HVAC and shell work with their own employees. Four of the contractors were specialty shell contractors offering performance-tested HVAC installation services using subcontractors. Five of the contractors did no direct installation work themselves; instead, they acted either as general contractors using subcontractors or as customer's representatives and supervisors, with the customers signing installation contracts with independent installation contractors.

The average job size for the private contractors doing some significant part of the installation was $9,333. In contrast, the not-for-profits averaged $4,500; these tended to be low-income weatherization specialists. The remaining contractors, who acted only as diagnosticians and coordinators of work by others, billed an average of $2,250, since little if any actual installation work was included.

inadequately sealed or designed. Only two contractors responded that they "always" did duct testing; the others "usually" did it. Contractors tended to be more concerned with duct leakage when ducts were placed outside the pressure boundary of the building rather than inside—for example, in a basement or a second-floor joist system. Most provided duct testing at the end of the installation, when the installers were still there to remedy defects.

Pressure Balancing

During the phone interviews, contractors were asked about the frequency with which they performed pressure-balancing tests of the conditioned zones of the building. Three contractor responded that they did not provide balance tests as part of the home performance inspection, while eight contractors stated that they routinely provided such testing. Four contractors stated that they occasionally provide such testing, but mostly in cases involving specific complaints or distribution system modifications.

Of those contractors who routinely provided pressure-balancing tests, the larger HVAC companies stated that they did not provide the tests at the time of the general building inspection and diagnostics, but that they did provide the testing at the completion of all installation work. They stated that pressure-balancing problems usually exist in buildings, and that to test up front is unproductive, because the work that is proposed on areas of distribution repair, shell modifications, ventilation, and so on will change the building dynamics—and not necessarily in ways that improve the balance of pressures. However, at the completion of all scheduled work, a technician can accurately evaluate and correct the levels of imbalance that exist. Their conclusion was that no matter what the findings of the initial building inspection, pressure balancing would ultimately need to be performed before the job was complete.

IAQ and Health

Aside from the CO and pressure issues mentioned above, IAQ diagnostics were usually limited to a moisture inspection, without analytical investigation. Molds were not identified, since most contractors agreed that any mold in the building needs to be addressed whether or not it is inherently a health risk. In this view, naming the mold species only adds an unnecessary cost. Most of the contractors stated that they corrected moisture problems, not mold problems, and that they did not specifically contract to mitigate or clean existing mold from buildings. Only contractors working on low-income Title X housing engaged in lead-safe work practices, and none of the contractors that were interviewed performed lead testing.

RICK CHITWOOD

Kneewalls like this one are often found to be uninsulated—a major deficiency.

Building Shell

Infrared (IR) imagery was done by only two contractors, on a limited basis. The high cost of equipment deterred some contractors. But it also seems that many contractors did not know how valuable a tool for shell analysis IR imagery can be, or had not considered the added value of thermal imagery in a customer report or analysis when subcontractors are being directed in insulation and air sealing. Contractors in programs that included IR camera training tended to value the camera highly, even if they could not afford one.

Building Modeling

All the contractors developed some sort of building model. They used this model for various purposes, including sizing the heating and cooling plant, sizing the distribution system, and for estimating savings and providing investment and payback information to customers. A number of the contractors expressed concerns about the accuracy of models. At the same time, very few contractors were validating models against fuel bills or collecting postretrofit billing data for analysis. The difficulties of accessing actual fuel bills and of taking customer behavior into account were cited as reasons for not tracking postretrofit performance. Contractors did trust the software to help customers make investment decisions and to compare the relative savings potential of various improvements.

A few of the contractors we interviewed used *Manual J* for modeling and most used it for sizing, when equipment replacement was required. *Manual D* was used only infrequently for distribution sizing, although at least partial distribution system replacement is not uncommon when the design is bad and the ducts are leaky.

Education and Training

How do contractors find home performance information for themselves and for their employees? What has helped them to educate their customers? Publicly funded customer education efforts in various regions of the country did not receive high marks for effectiveness. Some of the contractors felt that marketing experts for home performance programs might want to consult some of the participating contractors and gain a better understanding of the home performance process before launching or relaunching their ad campaigns. The concern voiced by the contractors may come in part from educational efforts that emphasize replacing a furnace or insulating walls, without encouraging consumers to hire contrac-

tors who performance-test their work or offer comprehensive workscopes.

Contractors considered employee training to be an important investment of time and money. The larger contractors interviewed all had some type of formal on-the-job training system for employees. Most of the contractors were seeking additional training for their staff. The contractors had trouble finding qualified staff. Many of them used formal or informal apprenticeship programs, connecting more experienced staff with newcomers, to encourage technical staff to learn more and earn more. Some of the contractors using certification programs had integrated the certifications into their pay scales, providing explicit career direction to their employees and financial incentives for professional development. Conferences and periodicals were listed by a number of contractors, but these were considered as sources of basic information; they were not regarded as sources of the detailed or hands-on information needed to implement new business and technical practices. Contractors also accessed supplier and manufacturer trainings as a primary source of technical information.

Good Guidance

This survey focused on a small number of relatively successful home performance contractors. It is by no means a picture of the entire emerging profession. Our interest here was in finding what best practices could be inferred from such leaders, as a guide to other contractors and program developers. And indeed, we found a lot of good guidance on a variety of topics.

We also found that even these relatively advanced home performance contractors were not perfect. Some were doing limited workscopes, were avoiding full diagnostics, were not modeling to estimate energy savings, or were unable to capitalize on the growth potential of the business. Others were able to overcome obstacles and create strong growth. The biggest differences in success seemed to be in business practices rather than in technical approaches. This finding suggests that home performance programs should consider placing greater emphasis on this aspect of contractor training.

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