

Ohio Sample Audit Pilot – 2003

The Sample Pilot or Batch Test Protocol (BTP) audit process has been reviewed and the final data speaks for itself. As I had predicted, there is no significant difference in the performance of Full HERS (FH) versus Sample HERS audited (SH) homes. I hope we can build on this study and can look for ways to facilitate volume builder participation and a market transformation to better built, independently rated, ENERGY STAR labeled homes.



I would like to highlight a few issues.

1) **Origins** - I initiated a sample audit program for two builders in 1998-99. The HERS industry Tech Guide prevented my completing those projects. Convinced that the technique was viable and that our industry would benefit from it's inclusion, I wrote the Sample Audit Pilot proposal to honor my agreements with my two builders, to bring Sampling to Ohio and to hopefully mainstream it nationally.

2) **Can't fail** - The proposal was deliberately written more conservatively than the EPA Sample protocol, both to gain acceptance but also to help ensure success. The builder option strategies allowed for a 2.5 point cushion. Last year I stated that we had a 100% pass rate. My concluding remarks were to convince the doubters, but I failed to make all of my points. Briefly, with a 2.5 point cushion, a house that meets the performance bench marks cannot fail. Those remarks are again posted on my web site.

This OEE/ Quantec review with independent HERS auditors also had a 100% pass rate.

3) **Costs** - I believe the cost analysis should be focused on savings accruing to the builders. This project was designed to validate Sampling with the hope of improving volume builder participation in the rating process. Savings accruing to the Rater and the Provider will ultimately be reflected in lower rating costs to the builders.

There are two groups of costs: the cost to the builder and the cost to the provider. The Report comparison seems to intermix rater, builder, and provider costs. I don't understand this section.

Quantec Report: Table IV.1

PR Comment

Cost Item	Description	Cost	Payer	EDH Sample
Baseline Audits	Initial verification of energy model	\$4,050	Builder	300
Training	\$4,600/year for 2 years	\$9,200	Builder/ Rater	As required/ Bldr
Consulting Services	\$5,600/year for 2 years	\$11,200	?	?
Rating Fee	\$200/each for 360 homes	\$72,000	Builder	300
Software Fee	\$15/each for 360 homes	\$5,400	Builder/ Rater	Inc/
Rater Processing/Data Mgmt. Fee	\$25/each for 1,800 homes	\$45,000	?	Negotiable
OEE Processing (Rated Homes)	\$35/each for 360 homes	\$12,600	?	?
OEE Processing (Sampled Homes)	\$15 each for 1,440 homes	\$21,600	?	?
Average		\$100		Avg. \$60
Total - Quantec Comparison		\$181,050		\$108,000
Total - Actual Use Comparison	FH - \$300 SH - \$60	\$540,000		\$108,000

In particular:

→ *Training builders*

- Training is not a cost of a sample vs. full audit program. We would train builders in both instances and it is usually at rater or builder expense, not an expense of the Provider. Ohio has had Training dollars available for Architects, Builders, Code Officials, and Consumers. We have used and are still using some of those dollars as a function of the state OEE education effort. This training exists externally to the rating program.

→ *Processing the ENERGY STAR labels for Sampled homes*

- The Provider establishes the fee, if any, for processing SH audits. My spreadsheet certificate submission automated the HERO process. My database certificate print report could have printed the ESH certificates for the cost of the paper.

Based on the costs incurred in the Pilot and the expected costs that would be necessary to for an expanded Program effort, these additional costs are estimated at approximately \$40 per home, for a total cost of \$100 per home to obtain the ENERGY STAR label using a sampling protocol.

- **I am now a HERS Rating Provider. I currently offer to administer SH Programs for far less than \$100 per house, including the field auditor rating fee, the software-licensing fee, and my overhead.**
- My rating competitor in the Columbus market has offered to do FH audits at \$100 each ... that's Full HERS audits, not sample audits. How can he do that?

4) **Support** – *Early support for major builder commitments is very important.*

Pilot partners included a small, a medium and a large production builder, Ohio HERO, RESNET, Fannie Mae, the EPA, and myself.

The medium size scattered site builder, Summit Homes felt he was receiving inadequate support and dropped from the program before rating any homes. Both the small and large builders expressed the same concerns, but remained in the pilot.

The Pilot's primary goal, to substantiate Sample audit outcomes, was a success. My goal to use that as a platform to develop additional builder services and participation was cut short. The large builder, M/I Homes dropped our sample audit program at the end of the Pilot to start a 100% audit program offered by a competing rater backed by FHA EEM mortgage products.

The support that was lacking was critical.

The state projects \$40/ house in additional costs; the builders had spent \$800+/ house in additional costs; however, neither builder received a public thank you, local or state recognition, or award for their commitment to our program.

We missed easy opportunities.

The Ohio Governor's Award for Energy Efficiency was not awarded in 2001 or 2002 to any builder.

The Ohio project was fairly unique nationally in that the builders paid all expenses for both the improvements and audits. No utility funds were used. No state grants funds were used. No tax incentives were available. As it turned out, no pilot EEMs were available. This was a self-initiated, pay as you go risk assumed by these builders on my promise of benefits. This is a huge shift in what we expect of cost driven builders; however, I was not allowed to develop this as a media event or even to make this claim.

The EPA was receptive to the builders' needs, issuing media support letters, marketing suggestions, and even devised the 100% recognition logo to help identify significant new builder partners; however, local, state and lender support never materialized.

Getting Ohio builders to commit 2500 houses to a single untried program took a huge amount of work. I think it is critical to assemble early support for these major builder commitments. Since the build-out time can average six months or more, the span from initial commitment, ramp up and rising costs to final product delivery and hoped for recognition is a very tenuous phase.

We lost one builder early because of unfavorable value to cost comparisons. We lost a huge ongoing ad budget from the 2nd builder after their early disappointment.

Lesson learned: We work for the builders; we need to support them.

5) **V. Findings and Recommendations, Potential Energy Savings –**

I disagree with ...

While some growth in the number of HERS Ratings and the number of ENERGY STAR labeled homes occurred between 1997 and 2000, growth took an exponential leap in 2001 and 2002 (during the Pilot implementation). If we conservatively estimate that just half of the additional homes labeled ENERGY STAR were attributed to the availability of the sampling protocol...

This is arbitrary. All homes in this pilot were committed because of the sample audit feature. We should not limit the number or the savings to ½. That's not the question anyway. **The real question is how successful is 100% ESH auditing with volume builders, and how successful would it be at the proposed sample rate?** We had nothing in Ohio before the pilot. Indiana has done very well with big numbers, but do they include an 1800/ yr builder at 100%? Has any builder paid audit program in the country done 1800/yr 100% audits?

6) **Next steps** – I will continue to focus on bringing the advantages of best practice to more homeowners by way of the builders.

- If we are really trying to bring about a market transformation, we will benefit if we streamline the home energy rating process.

I have web based and handheld audit data entry systems in place and a database to automate much of the rating routine. My Provider service goal is *Faster – Better* ... for myself and for my raters.

- Sample audits can work; we have the tools ... we need to perfect the process. When can we expect to hear from the EPA / Industry task force reviewing the Sample Protocol?
- Builders need better, more useable information, but BOPs are designed for statistical relevance and have little bearing on builder acceptance. I hope to see a change in that.
- We have built a complex protocol to insure Provider and Trainer qualifications but leave the barn door open to potential conflicts of interest and loss of credibility with bundled rating providers and even have prospects of builder self-certification.
- Code and rating systems generally reward crunching numbers and paper. Our communities will be better served if we can focus our efforts on being the local energy experts, the consultants on how to do it right ... the first time ... and not just be paperhangers with fancy certificates.

I am currently conducting training sessions for code officials on performance based code compliance. We have years of “pile on the insulation thinking” to erase. An early goal is to get ESH certification as another code compliance mechanism in Ohio.

I am conducting BIA training sessions. “Mold is gold” finally got their attention. My immediate goals include eliminating poly vapor barriers, bonus room floor bleeder ducts, ventilation strategies that don't work ... and demonstrating the value of working with trained energy raters on a continuing basis.

I have a community based home weatherization program in development. The greatest value of the existing HWAP program is one of its greatest limitations. By focusing on low-income households, it has indeed helped those most in need, but the system has not evolved to others. Middle income America is generally ignorant about the energy conservation lessons learned.

I have a Zero Energy project underway. Builders will eventually need to move beyond Energy Star for market recognition. ZEHs can be a flagship now and may be our next mainstream.

We have grown beyond the solo state energy office rating organization to include some sizable, for profit audit organizations. Being able to make money at the endeavor is the first sign of a maturing market. We have indeed turned that corner; however, we need to be aware that conflicts will exist between the old and the new rating agencies.

I am an independent Rating Provider. I have no government, university, or foundation support. My competition is the state's Office of Energy Efficiency.

The Quantec Report details the amount of processing fee that our state underwrites. My rater fee has no underwriting. It makes little sense to continue subsidized ratings programs when government budgets are strained to the breaking point and where market forces have provided effective alternatives.

To truly enable the market, we need to find ways of states promoting all energy service providers and all raters ... equally.

My rater competitor was able to arrange FHA backed EEMs for one of our Pilot builders. Good for him; we couldn't do that. As advantageous as that could be to other builders and to other raters, there is no information available in Ohio on how to make this work. Would any of you like to know how to make EEMs work for a 1600/yr builder? I would.

It does make sense to start heeding the lessons learned and to understand that market transformation is of necessity a "for profit" endeavor. Competent, well-trained energy professionals have a huge future. The rating industry can be a part of that future but we need to be ready. Sample auditing is just one step in that direction.

If we are unable to transform the market ... we have failed.

If we transform the market and are unable to service the demand ... we have failed.