

Session #3

## Does Every Home Have to be Rated

The Role of Batch Testing.

Monday 3:30

Let me start by saying thank you ... to Steve for inviting me to speak here today ... to those of you that support new ideas and approved our Ohio Sample Audit Pilot ... and to all of you for being interested and being here.

I am an Independent Energy Consultant, HERO Home Energy Rater, Model Energy Code “Expert”, ENERGY STAR HOME ALLY, I am a House Doctor, a Conservationist, and over the years some builders have called me a Tree Hugger ... but, most builders have just never called me ... but that’s changing

I’m here to talk about our Sample Pilot, but I’m first going to talk about several other issues that will hopefully add a better understanding about me and about our approach.

Let me first define my goal in my consulting and home energy rating business. It’s my third or fourth business, but it’s my first business aimed at increasing both the common good as well as my income level. Looking back, I find the last ten years more focused on the common good than on my income. As a kid, I thought if I could get a job and earn \$10,000 a year, I would be a success. Thankfully, I never got that successful ... until I got in the energy business. I call it the energy business ... but I don’t sell energy ... I give it away. I give you back what you throw away.

My goal is simple ... build better housing. That’s it.

The ENERGY STAR program, the HERS rating program, Ohio’s HERO program are all secondary to that goal. I care about these programs, but only as tools to accomplish my primary goal ... to Build Better Housing.

I have promoted energy efficiency for about ten years. My main focus has been on conservation. What is conservation? Conservation is not living with less... it is eliminating waste ... Waste is not sustainable. Conservation in the 70s was turn down the heat, put on a sweater and sit in the dark. That’s Deprivation, not Conservation ... it won’t sell in America.

Why should we conserve? Why not? Would you crack six eggs for a three-egg omelet? No? ... then why do we do it in our housing... the wasted eggs are gone, the house sits there wasting 50% of it’s energy ... for the next hundred years.

Conservation or prudent management of our resources is intrinsic to economic renewal programs, renewable energy programs, and a sustainable world. In the energy arena, why does every day have to be Fat Tuesday?

I'm sharing some of my personal outlook in hopes that it will be helpful to you. I also want to assure you that I haven't jumped into the energy rating business as an opportunity to make a fast buck ... it sure hasn't been that. But I think that time is coming.

Why did we start the Sample Audit program in Ohio? I started a sample audit strategy in 1998 with Avenbury Lakes in Avon, Ohio. Avenbury will be a community of 350 homes, built as an environmental, senior only development. The builder wanted to follow the environmental conservation theme as well as market a low cost to live in product to his potential fixed income buyers. The constraints included the cost to audit each home. Building only six plans ... a total of 350 times ... lends itself to a very high degree of repeatable building practice. The need to test every house was clearly not there. This sample audit program was terminated with the NASEO Tech Guide 99. Incidentally ... continued audits have substantiated the very predictable performance results.

I see the current HERS audit guidelines as comprehensive ... to ensure an adequate survey and testing of each home certified ... That's good. I see the ESH program as a well crafted marketing program designed to create the consumer awareness that we all need ... That's Good. With the accuracy of data sampling techniques, with the need to facilitate the market, audit sampling based on an assured system of audit control is possible and is necessary. That's better. If we succeed at transforming the market, let's not fail at servicing it.

Before I go into the how and why of our Sample Protocol, let me ask a couple of questions.

If it is obvious that Conservation Saves Money ... and that Conservation Saves the Environment ... *then why don't we do it more often?* ... and

If everyone wants a home that runs better, runs cheaper, and lasts longer, than why are we still looking for a market transformation?

We all know how to build that house, but, for the most part, we haven't had anyone asking us to do it. Have you ever figured out why? The problem is awareness. To the extent that they care, they think they are already getting it. To cure the problem, we need to raise that awareness. We have what everyone wants ... we need to find the tools to tell Them that We have it. This is an educational or marketing task ... the entire industry, including the HERS segment, needs to address this issue first.

The Ohio Sample program was designed to both jump-start and to expand the Ohio rating business. We have not found the market willing to invest the time or resources to build the better product. This is a dual edged issue ... time and money.

More than three years ago, I had an 800/year builder agree to our program, spend the money on baseline audits and on several required upgrades. To my knowledge, they are building at this ES level today, but they are not auditing their homes. In their minds, the certificates relative market value is below the audit cost, even on a sample basis!

I had another builder balk at the audit time requirement. Performing audits takes time. Delays are disruptive to the build schedule. Time is money. To us, time is less important. Some of you have been selling EE for 25 years and have grown very patient. But to a builder, time is an art form. Builders generally don't build, they schedule. Good ones schedule well. We represent an unknown; we are a potential disruption to their schedule.

To build our market, our strategy has been to sell ES to a large production builder. Market transformation cannot be attained without production builders. They lead the market; in some regards they are the market. To set up an audit business plan that does not accommodate them is useless. Once on board, the large builder will spend large dollars promoting the program. We gain both large numbers of ratings, but more importantly, we gain market recognition. Our large builder is spending LARGE dollars promoting ESH. Again, our goal here is to build market awareness.

The builders we are working with include M/I Schottenstein Homes, Summit Homes, and Avenbury Lakes. The three offer a good representation of the building industry in Ohio.

M/I, a regional builder with 2000 homes/yr in the Columbus market, builds 200+ plans in a score of developments. Production is localized and well managed by an extensive support staff, but the number of homes and the number of sub-contractors is huge.

Summit, a statewide-scattered site builder of about 500 homes per year, sells from 12 regional offices and builds with several different crews. Their expertise is management and distribution. This company centrally warehouses components and delivers a house to the site on a truck in reverse stack order. They build off the truck ... not out of the mud.

Avenbury, my environmental builder, builds just six plans and by now, they are as predictable as rain. Wet Cellulose, tight construction, high efficiency mechanicals, high performance glass, a complete thermal envelope. They'd have to leave off the front door not to be ES.

Large, medium, and small ...these builders represent a good cross section of the Ohio builder community. But they stand apart ... all three are building 100% of their homes to ES standards ... as standard production practice ... not as an upgrade ... it has become their way of doing business. All three are supporting my fees for their audit costs. Builders paying for the necessary upgrades, builders paying for the rating services ... for 2500 homes ... this is a significant buy-in to our ES program and I think a first. We are about to turn the corner ... maybe this time ... the light at the end of the tunnel really isn't a train.

The Ohio Protocol differs from EPA Sample Audit guidelines.

The EPA includes ...

Audit 15% or 1 out of 7 homes, if 1 fails, audit the entire batch.

I think that a 15% random sample can offer credible data analysis. But let's leave that to the statisticians. Unfortunately, the EPA's failure remedy dooms the process. Few builders paying for 1/7 will pony up the money to audit the other 6. Few Raters serving the large builder will be inclined to fail a home that might force the client out of the program.

As an overview ... our Sample Program will include a

- pre-plan analysis of energy models
- required audits that identify predictable builder practice and
- subsequent training, as needed, to correct deficiencies.

In more detail:

#1 To establish and verify consistent builder practice, the Protocol first requires that a successful audit performance baseline be established on a minimum of 3 units of the same energy model in the same climate zone. This is intended as a performance evaluation tool, not as a prescriptive check off process.

*An adequate baseline will show predictable results  
of repeatable building practice.*

#2 The Sample Program allows for ES certification of a group of homes by testing a 20% random sample (1/5). If all of the sample pass, 100% of the batch is certified ES.

#3 Audit Failures require (a) Remediation (b) A retest of the failed unit for the failed component and ... (c) Successful tests of the failed component in TWO additional similar units selected at random by the Rater. We isolate on the failed component only.

#4 Homes certified by the Sample Audit program will be tracked for at least one year with a normalized consumption index to compare consumption for

Full v Sampled units.

At 1/5, this is a more intense scrutiny of a builder's production than most first year Raters will give their 5/5 audits. This is a detail program.

All agreements have to have definitions. 1st

- The Sampling Audit option will be established and supervised only by the HERS Rating Organization's Administrator or by a senior Energy Rater(s).
- Other participating Raters are properly trained and certified HERS home energy auditors.
- Full HERS Audits follow the HERS protocols.
- Sample Audits follow the Sample Audit Protocol.
- Volume builders build more than 100 homes per year, and have consistent production strategies.
- Energy Models are established by the Rater and will be based on the anticipated most difficult to pass combination of features.

- Climate Zones are established by annual weather data as found in *REM/Rate*<sup>TM</sup>.
- The Audit Performance Baseline consists of the minimum of three audits, *but may require additional audits to determine consistent builder practice as determined by the Rater.*

The sample audit process is keyed to understanding a builder's production practice. We are looking for consistency. If they are doing the same thing all the time, it's much easier to get them to do the right thing every time. We have found consistent building practice in each of the production builders we have audited.

Designing this audit strategy was simple compared to selling it to the builders.

To say the least, the Builder recruitment process has been challenging. Getting a builder to see the advantages of doing something that no one is asking for, and to spend money doing it ... is a very real challenge. I have been working on that with volume builders since 1997.

The final strategy that worked for M/I was my forming a partnership with M/I, Fannie Mae, HERO Ohio, and the Carrier Corporation. I offered my energy consulting service; Fannie Mae offered special loan packages as part of their Green Builder program, Fannie Mae also offered M/I a critical level of credibility for our program; HERO added the HERS blessing to move forward with a sample pilot; Carrier added an offer to supply high performance furnaces at a controlled price markup ... it was the cost advantage for working in our program; and ... M/I offered 2000 homes and the budget to market the program.

The final strategy for Summit Homes was easier. Summit had agreed to build 100% ES 2 years ago. Reviving the sample audit process convinced them to join our pilot and to now certify their homes.

It has been a long process, but I think we are nearly there.

We all have similar goals but where are we going with the rating industry?

Maybe nowhere ... if we can't convince people that We have what They want ... and if we do that ...

Maybe nowhere ... if we can't devise a business plan that will accommodate that market.

With the existing Ohio Raters and the potential trainees for as far as the optimist might see, there is no way that we could accommodate M/I, Dominion, Centex, Wayne, Summit, Pulte, US Homes, Ryan and the other builders in Ohio. I am already getting calls from other builders asking for a sample audit program. They perceive this as a deal and they want to get in on the action. Ohio is small ... we only build 50,000 homes per year. A 10% market penetration ... is certainly not a market transformation, but 10% ... 5000 audits would smother our rating organization.

I am so convinced that building better homes is the right thing to do ... and, more importantly, that others will agree with me ... that I have spent ten years promoting it. It will happen.

As economic lessons force ever more efficient business models ...  
As world trade arrangements require ever-increased production efficiency ...  
As individuals become more tuned to investment strategies with positive ROIs ... it becomes obvious, to prosper, you cannot allow waste.

Nature has no waste.

The world has a competitive edge with cheap labor ... we have a competitive edge with cheap energy ... why do we throw half of it away?

Those of us that can find the solutions to that problem will be very busy indeed. I might even manage to be a super success ... maybe I'll even earn more than \$10,000/yr.

I see other trends.

I see Sample Audits as a win-win situation. Those opposed generally fear the loss of rating revenue. Let me remind them that TV did not spell the end for Hollywood and VCRs did not doom movie theaters ... they built the market.

We need to build a market ... for our services.

I see bigger threats to this industry than sample audits. The practice of allowing bundled ratings or allowing subcontractors to also do audits is a potential problem. On the surface it makes sense ... bundling services for a lower cost to the end user ... it grows our market.

My concern is that of objectivity. An independent Rater has maybe \$300 per home at stake in the rating process. An insulator or heating contractor has a several thousand-dollar stake. Money trumps objectivity.

The HERS requirement of signing an affidavit of financial interest should be enforced and statements should be given to the builder, the buyer, and the lender. In addition, HERS check audits should be increased on any bundled rater's audits. We hear of separate labels for FH and SA homes, how about another label for homes rated by Raters with financial interests in that job?

In an ideal world, we would allow no financial conflict of interest to exist. Let's learn from the Appraisal Industry ... Appraisers do not appraise a property in which they hold a financial interest.

I think another threat is the "for profit" sector. We're all innocents. Most of us are weatherization, not-for-profit, conservation, environmental, or EE geeks. I'm in there

somewhere. We've put our mission first and our incomes second. But that's going to change.

Let me tell you of another corner we just turned in Ohio. We have just finished training a group of Raters for a business owner who wants to get into the rating business. Two years ago, he thought my program was a waste of time. Today they see the business opportunity and potential profit in home energy ratings and they are one of us. Others will see that opportunity. There's nothing wrong with profit; we just need to understand the motivations and to speak the language. We need to be prepared to administer our rating organizations staffed with Raters who put money first.

Another threat to this industry is inefficient Rating Organizations unable to deliver services. That has not been a problem ... but then, we have not had a market to sell to. The market is coming ... will we be ready?

Again ... we fail in our mission if we do not build the market ... we fail in our mission if we cannot serve the market when it comes.

Thank you for listening.