The Inherent Risk of Going Green

Graham Davis
The Inherent Risk of Going Green

- **IBACOS**
  - Building Performance Specialist
- **John Laing Homes**
  - Quality Assurance Manager
- **Quality Built**
  - Training Program Manager
- **Habitat for Humanity International**
  - Senior Technical Advisor
  - National Green Building Program Director
And...

- Who are you?
• Green building is entering a new era
• The history behind the challenges
  – What do builders really understand about green building?
• What are the risk in transitioning into becoming a green, high performance homebuilder?
• What are buyers expecting?
• How does this transition affect the trades who build the homes?
• 10 Steps a company must do to transition into being a high performance homebuilder?
As a movement, green building began with a handful of tree huggers in the early 70’s who felt the pressure to move the world to a more environmentally friendly place.
By the 80’s a few visionaries were building test tube homes for the very brave.
In the 90’s the EPA jumped on board and the Energy Star program was born.
The new century has ushered in a maturing green building era where large scale production builders are coming on board.
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Tackling the Challenge

The question we’re addressing is:

What issues must a production (or any) builder be aware of when transitioning into becoming a green, high performance homebuilder?
In the world of production manufacturing, home building is very unique.

The top three driving forces in home construction:
1. Location
2. Floor plan
3. Dollars per square foot
4,5,6…Somewhere down the list you will finally come to building performance.

For decades, the industry could get by with building fast, poor performing homes that were pretty and sold quickly.
While there have been significant advances in residential components in the last decade or two the technical training level of residential construction mechanics has been on the decline.

Mind you, this is only this presenter’s opinion as one who has been engaged in the industry in a “hands on” capacity for nearly 30 years.
“It is possible to be a high quality builder without being green builder, but you can’t be green if you’re not a high quality builder.”

Author unknown...but we say it a lot around IBACOS!
As a result of the green building movement, production builders are waking up to the fact that the challenge to “go green” will require more than a simple technology swap.
One of the greatest risk of going green without first going high quality is

BUILDING PERFORMANCE TOLERANCE
Conventional Construction

- Looser enclosures may:
  - Increase drying capacity of wall systems
  - Reduce potential for high concentrations of contaminants

- Lower owner expectation
  - Comfort levels
  - Utility consumption
  - Higher maintenance expectations
High Performance Construction

• Less room for error in wall systems performance
  – Reduced drying capacity of wall systems
  – Increased potential for high concentrations of contaminants

• High homeowner expectation
  – Stricter comfort levels
  – Lower utility consumption
  – Lower maintenance expectations
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Buyer Expectation

- Location: 25%
- Floorplan: 20%
- Size: 10%
- Price: 6%
- Builder: 6%
- Neighborhood: 7%
- Quality: 2%
- Other: 5%
- Value: 3%
- New construction: 3%
- Aesthetics/style: 4%
- Features: 4%
- Low maintenance: 5%
- Technical aspects of your home and make any comments you may have.
Homeowner Expectation

- Style / Aesthetics
- Storage
- Security
- Safety
- Resale Value

What did they expect?  
How satisfied were they?

Builder Reputation
Reliability
Quality of Home
Privacy
Neighborhood
Natural
Healthy
Flexibility
Energy Efficiency
Easy Operation
Easy Maintenance
Durability
Convenience
It has been this order of market priority that has driven builders to allow for the decline in maintaining high **Quality Managed Systems** in the building process.
When demand for high quality has been the driving force in any manufacturing process, there are tools and processes developed to ensure quality is being done.

Since this demand has been low on the radar for residential builders, these tools and systems have been lacking.
Why?

• It’s so easy to hide our mistakes and poor workmanship!
• Processes to examine:
  – Initial design
  – Plan sets and details
  – Optimized value engineering
  – Purchasing
  – Construction
  – Trade training
  – Quality standards & quality control
  – Inspections
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Design

Form Follows Function?

Systems Integration?

Optimized Value Engineering?

These terms have gone begging in residential home design.
• Too often the design charrette starts with the criteria:
  – What is the developer mandating?
  – What does market research say the buyer is looking for?
  – What “base” home features can we afford offer?
• A layout is then established followed by a variety of elevations.
• Somewhere around 50% plan completion, someone suggest they do a “value engineer” session.
Before the design considerations on the previous slide, start with this criteria:

- What are our performance objectives?
- What is our personal “building code of ethics”?
  - The common construction practices that we know will fail.
  - The best practices that create a home we are confident in.
- What performance systems do we believe in and what design considerations will ensure their proper operation?
How early in the design process do the critical trades get to provide input?

Once the “Building Code of ethics” has been established, there is much less to fear.
A building code of ethics could include things like “We will not install open combustion equipment inside the living space. Especially when there will be an industrial range hood nearby!
What is a “complete set of plans”?

How much information is left out?

Trades often simply follow “standard practice”.

But in many cases, a high performance home isn’t built according to “standard practice”.

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A green home is first and foremost an energy efficient home.

But it is also a material efficient home.

Homes must be designed with materials in mind.
Truth is that one of the risk in going green by applying OVE methodology is the builder may save a ton of money!
That and…

There won’t be as many leftovers when the house is finished!
And we know how much builders love leftovers!
The demand for the most square footage for the least amount of money has played a huge role in the decline of quality.
“Spec and purchase” design must fall to the wayside when transitioning to high performance building.

It has contributed to such issues as:

- Incomparability of materials that were bonded together.
- Incompatibility of systems that share the conditioned space.
- Installation of equipment that doesn’t perform the service it was intended to perform.
- Early equipment failure and warranty issues.
- General “jury rigging”
Purchasing

• In most cases, penny pinching simply replaces sound, well thought out design decisions with cheap materials and installation.

• Often, it isn’t much of a challenge to find an extra $1000 laying around in poorly thought out residential design and construction process.
If we didn’t get it right on paper, there is no logical reason to assume we will get it right in the field.

This reality becomes accentuated when building high performance homes.
Leaving detail decisions to the trades will often result in an attractive but dysfunctional product.
• Systems integration is not a concept that most component installation mechanics grasp.
Systems integration is often easier and definitely cheaper to work out on paper than in the field!
This detail never appeared on any plans.

How will the framer incorporate this window buck?

Why did this installation happen in the first place?
• Why has trade training suffered so much?
  – **Greed?** In pursuit of higher margins, builder’s put the squeeze on labor cost.
  – **Foreign labor?** This adds a layer of cultural and communication barriers.
  – **Turnover?** Are the days of mentor and apprentice past?
  – **Highly specialized trades?** This adds to a lack of system integration understanding.
  – **Attitude?** As builders have become investors and trades become syndical have they lost their sense of craftsmanship?
Whatever the case, the high performance, green home builder must be ready to tackle this issue.

Training the trades will have to begin with the builder’s initiative.
What happens on the ground and down the road will always come back to the builder.
The old industry process models “worked” in an economy where builders were selling homes as fast as they could build them.
Those days are gone and may never return.
Can you remember a better opportunity for change in the history of modern American home building?
Summary

• The great risk a builder takes in transitioning from the conventional to high performance green building is in thinking that the only thing that needs to change is the product.
Albeit simplified, here is the path to becoming a high performance home builder...
Make some difficult choices about what kind of builder you want to be.
Establish and cultivate a culture of quality in your organization. Make it clear to everyone, that producing a high quality product is your first priority.

The Quality Goes In Before the Name Goes On

- Zenith
#3 Evaluate Your Process

Take a thorough look at how your business operates.

What works?
What doesn’t?

Where are time and money wasted?
Define the quality and performance standards for your product.

Create your companies “building code of ethics”.

Rebuild your scopes to truly define your product and use them to train your trades.

How far can you push the envelope?
Perform a thorough evaluation of what you are currently building.

How does it compare?

How far off your new standard are you?
#6 Start with a Fresh Design

The best place to start building a high performance home at design stage.

Present your new quality standards and building code of ethics to your trades and let them in on the design process …early!

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Create new internal quality control processes that involve everyone at every level.

Develop Superintendents to truly know quality.

Develop partnerships with trades that practice internal QA control and are accountable.
Participate in performance certification programs.

Utilize third party certifications and quality assessments.

Never stop improving the product.
#9 Sell Your Product

Build your marketing strategy around high quality and high performance.

Educate your sales staff on how to sell things besides finishes.
Be the builder that sets the standards for your market.
Questions?

Graham Davis, IBACOS
gdavis@ibacos.com
www.ibacos.com