The Wide World of What You Can Do … Besides Ratings

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Steve Byers and Nathan Kahre

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Why this session?

- Ratings are interesting and valuable but….
  - Rapid commoditization (Price reduction)
  - Large well funded companies trying to gain market share
  - Residential has boom and bust cycles
- We want everyone to grow in their career.
  - Learn more
  - Do More
  - Make More $

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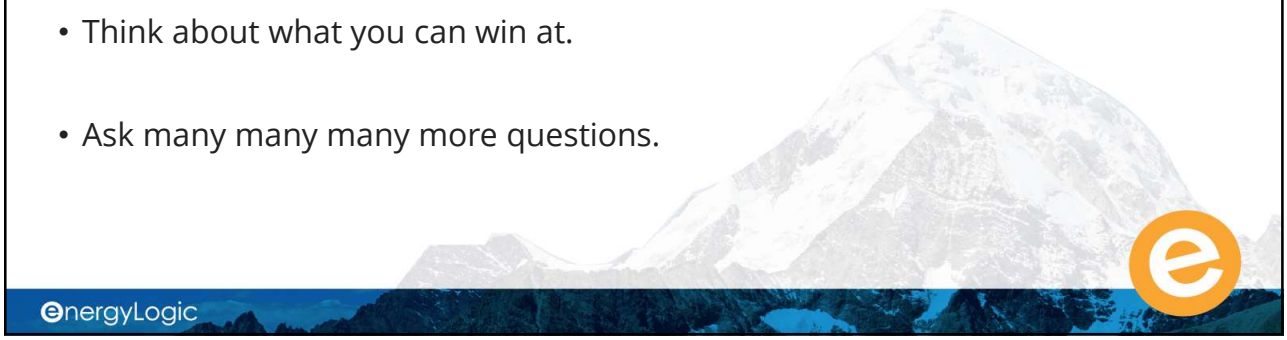
How to use this session

- Look at what possibilities are out there.
- Think about what is or isn't aligned with your company's vision and mission.
- Think about what you can win at.
- Ask many many many more questions.



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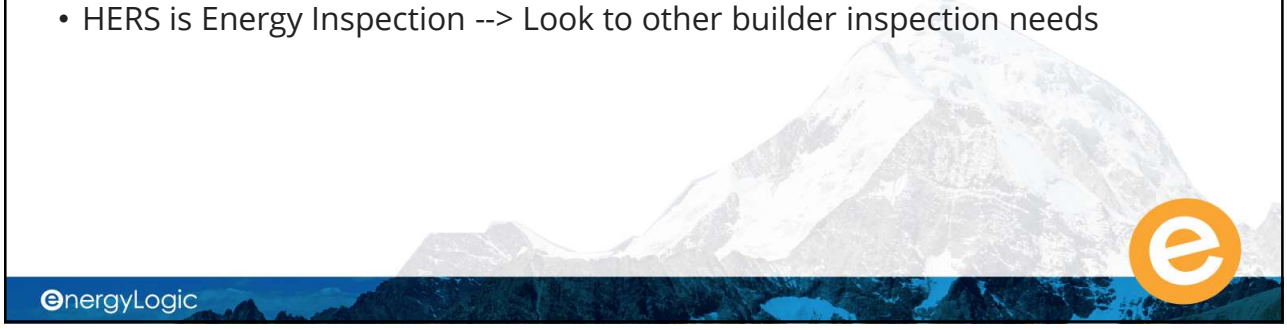
Sources of Inspiration

- HERS is Residential --> Look to Commercial Buildings
- HERS is New Construction --> Look to Existing Homes
- HERS is Energy --> Look to other Building Science Areas
- HERS is Verification --> Look to design and install
- HERS is Energy Inspection --> Look to other builder inspection needs



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Commercial Services

- Commercial Energy modeling
- Blower door testing (Big building testing)
- Spray rack testing
- Benchmarking (EPA Portfolio Manager)
- Commissioning
- Above code program compliance
  - LEED BC&C
  - LEED O&M
  - WELL

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Commercial Energy Modeling

- Summary – Energy modeling for ASHRAE 90.1 or IECC C407 compliance.
- Pros: Free Software, High Profit Margins, Expanding Market
- Cons: Complex code and modeling protocols, Time intensive, not
- What Does It Take?
  - Training on software and code compliance.
  - ASHRAE Certified Building Energy Modeling Professional Certification
  - Some programs may require a professional license (PE or Architect)

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Commercial Blower Door Testing

- Summary – Large building testing per ASTM E779.
- Pros: High profit margins, expanding market
- Cons: Not required in every municipality, requires additional equipment and software, ASTM E779 is vague
- What Does It Take?
  - Training on Software, Best Practices, and Reporting
  - Equipment – Specialized shrouds, controllers, and something to move it all with.
  - Processes for whole building inspection and reporting.

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Spray Rack Testing (ASTM E1105)

- Summary – Testing for water intrusion at windows, doors, skylights, and curtain walls
- Pros: Simple cost-effective equipment, great add on to other commercial services
- Cons: Additional liability
- What does it take? - Talk with Carl Seville
  - Equipment and Training

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Commercial Benchmarking

- Summary – Collect and report of utilities (energy and water) and waste.
- Pros: Free software and training, required by QAPs and several municipalities/states across US,
- Cons: Competition, automated collection from utilities is limited
- What Does It Take?
  - Training and an account with EPA Portfolio Manager
  - Understanding of municipality/state/program reporting requirements
  - Good collection and review processes

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IECC Commissioning

- Summary – Review and functional testing of the HVAC, water heating, and lighting controls in commercial buildings
- Pros: High margin, great add on to existing commercial services
- Cons: Competition, high bar for entry
- What Does It Take?
  - Training and certification from accredited commissioning association (ASHRAE, AABC, BCXA, etc.)
  - Some municipalities will allow commissioning be perfomed by liscenced professional (Architect or PE).

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Above Code Commercial Programs

- Summary – Consulting services to guide projects through non-HERS based programs like LEED (BD&C, O&M, ND), WELL, SITES, Fitwell, etc
- Pros: High Profit Margin, Focused Clientel, Mission Oriented
- Cons: Sustainability consultants are optional, competition in the market, higher expectations than residential clients
- What Does It Take?
  - Learn your desired program and look for professional certifications to prove it
  - Develop best practices for consulting (not just compliance)
  - Pilot if possible

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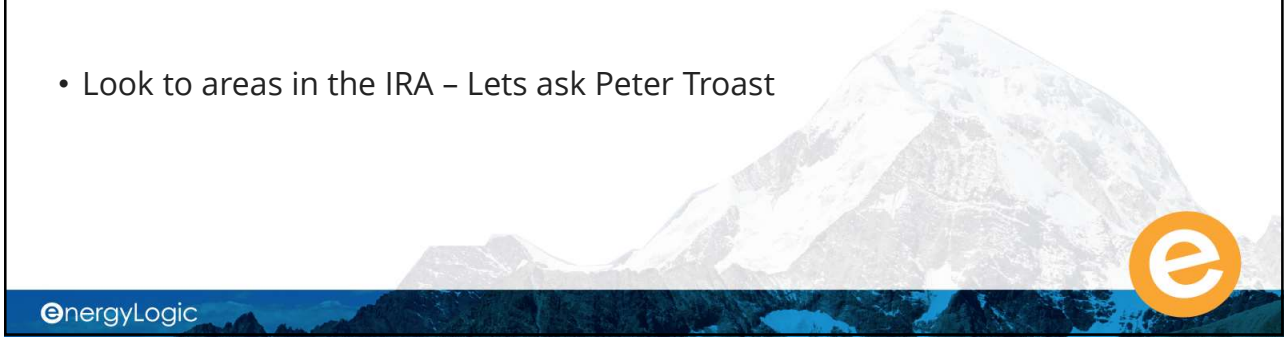
Existing Buildings

- Energy Auditing (Residential and Commercial)
- Home Performance Contracting
- Electrification & Decarbonization Consulting

- Look to areas in the IRA – Lets ask Peter Troast



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Energy Auditing (Residential and Commerical)

- Summary – Inspection and testing of occupied homes/buildings to assess energy consumption and provide guidance on potential upgrades and energy saving potential,
- Pros: Defined certifications and processes, large volume of potential clients, IRA funds available.
- Cons: Occupied buildings, direct interaction with clients (homeowners), difficult to get residential clients to see value
- What Does It Take?
  - BPI (Energy Auditor) or ASHRAE (Level 1,2,or 3) Training and Certification
  - Learn approved software to be eligible for IRA funds
  - Outreach and marketing to engage building owners

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Home Performance Contracting

- Summary – Energy Auditing and then contracting or performing the recommended work.
- Pros: Higher margin work, large impact on home, get to make changes
- Cons: Managing and performing construction, working in lived in homes
- What Does it Take?
  - Contractor license (depending on scope of work and location)
  - Subcontractor relationships and material sources

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Electrification and Decarbonization Consulting

- Summary – Advising homeowners and home performance contractors on how to change from mixed fuel to electric equipment and reduce environmental impact of home. Provide information on incentives to reduce cost.
- Pros: Large margin and large impact, Highly specialized
- Cons: Small customer base, need to read the IRA
- What Does it Take?
  - Be good at home auditing
  - Be good at reading and interpreting incentive programs.

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Other Building Science Areas

- Indoor Air Quality
- Home Comfort
- Moisture Management & Durability
- Water Conservation
- Carbon & Electrification

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Indoor Air Quality

Consultation Areas

- Ventilation and Filtration
- Radon
- Material Selection
- Healthy Homes

Focused Services

- Radon Testing
- Ventilation Design and Commissioning
- IAQ Monitoring
- Homeowner Education & Training
- Indoor airPLUS Label

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Home Comfort

Consultation Areas

- ASHRAE Standard 55

Focused Services

- HVAC Warranty Inspections & Testing
- Manual JDS Review
- Temp/Humidity Data Logging
- Manual T

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Moisture Management & Durability

Consultation Areas

- Drainage Plane
- Sub-surface Moisture Management
- Vapor Management
- Wildfire Resilience

Focused Services

- Drainage Plane Inspections
- Drain & Dampproofing Inspections
- Moisture Intrusion Warranty Inspections

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Water Conservation

Consultation Areas

- Hot Water Distribution
- Irrigation & Landscaping

Focused Services

- WaterSense for Homes
- Irrigation Design
- Irrigation Auditing
- Hot Water Pipe Design
- Hot Water System Testing

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Carbon & Electrification

Consultation Areas

- Heat Pumps
- Hybrid Water Heaters
- Carbon Accounting
- ESG Reporting

Focused Services

- Heat Pump Design
- GHG Inventories

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Design and Install

Design

- HVAC Design
- Hot Water Layout
- Irrigation Design

Install

- Residential Solar
- Air Sealing/Aerobarrier
- Heat Pump Install
- Radon Equipment

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HVAC Design

- Summary: Performing load calculations, equipment sizing, and duct design per ACCA Manual JDS
- Pros: Opportunity to guide builders and improve comfort, HVAC performance is a key part of HERS, manage Energy Star Design Checklist
- Cons: HVAC industry hesitant to change, difficult to get buy in from installers,
- What Does it Take?
  - Learn an ACCA approved software (ex. WrightSoft, Elite RHVAC)
  - Get trained and have ACCA certification (Best practice but not required)
  - Gain and maintain builder's trust around quality consistent designs

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Hot Water Layout Design

- Summary: Design hot water distribution to meeting code requirements and reduce water consumption.
- Pros: Reduce water consumption, increase homeowner satisfaction, required by some municipalities,
- Cons: Another trade to coordinate with and gain buy in, entering realm of mechanical engineers, requires drafting software to deliver design, no industry recognized certification
- What Does it Take?
  - Learn IRC (or IPC) plumbing requirements.
  - Identify best practices to graphically depict water distribution (Isometric, plan view, section, etc.)
  - Learn best practices to reduce water consumption and amount of installed pipe (Go find Gary Klein)

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Irrigation Design

- Summary: Utilize builder's selected and designed landscaping to design a water efficient irrigation system.
- Pros: Industry recognized certification, opportunity to drastically reduce water consumption, opportunity to improve WRI
- Cons: Irrigation is what HVAC was 15-20 years ago, requires understanding of landscaping water requirements, competition from landscape architects, requires drafting program
- What Does It Take?:
  - Look to Irrigation Association Professional Certifications
  - Review training and best practices from Irrigation Association and leading manufacturers

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Do we want to install?

- Some Potential Install Areas:
  - Residential Solar
  - Touch Up Air Sealing
  - Aerobarrier/Aeroseal
  - Heat Pump Install
  - Active Radon Equipment
- Key areas to think about:
  - Value to mission?
  - Impact on company culture?
  - What licensing or certification does it take?
  - Profit margins?
  - Connection to potential client?
  - Competition?
  - Can we win in this space?

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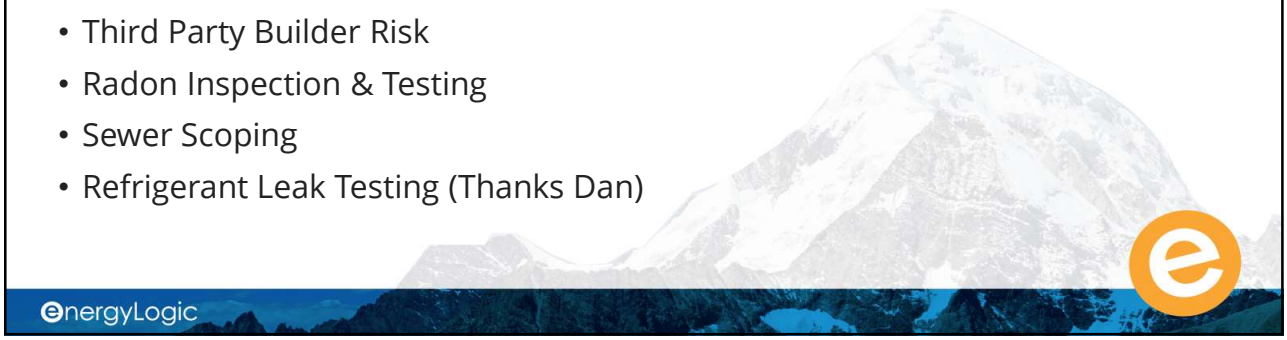
Other Builder Needs

- Warranty
- Punchlist Inspections
- Safety
- Storm Water Compliance
- Third Party Builder Risk
- Radon Inspection & Testing
- Sewer Scoping
- Refrigerant Leak Testing (Thanks Dan)



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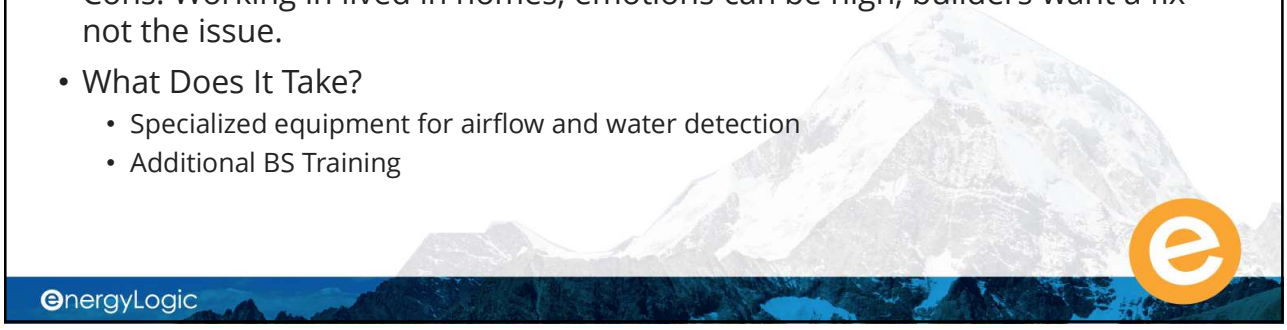
Warranty

- Summary: Post-close inspections to address comfort, moisture, and energy issues in the home.
- Pros: Create closer relationship with another part of builder's team, maintain position as building science expert.
- Cons: Working in lived in homes, emotions can be high, builders want a fix not the issue.
- What Does It Take?
  - Specialized equipment for airflow and water detection
  - Additional BS Training



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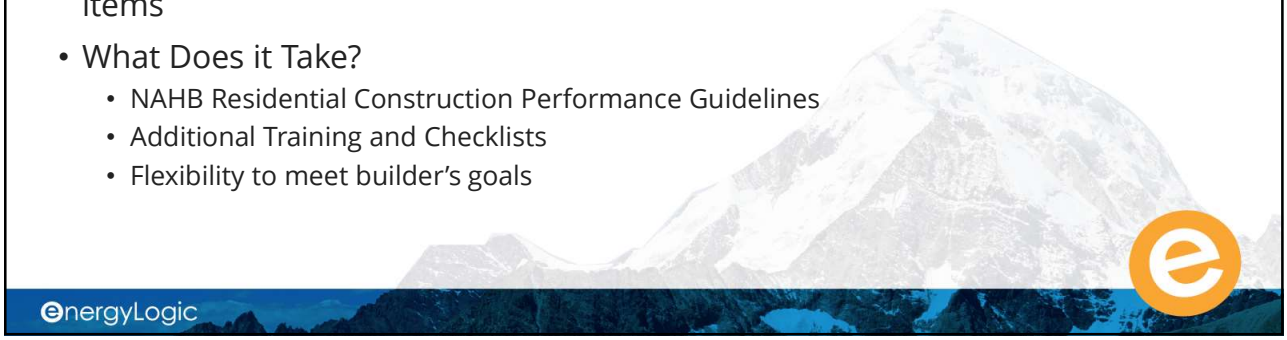
Punchlist Inspections

- Summary: Visual inspection for cosmetic defects of installed finishes and provide a punch list for the builder to fix before customer inspections.
- Pros: Grow services per home, gain revenue
- Cons: Not well aligned with mission, requires new training and inspection items
- What Does it Take?
  - NAHB Residential Construction Performance Guidelines
  - Additional Training and Checklists
  - Flexibility to meet builder's goals



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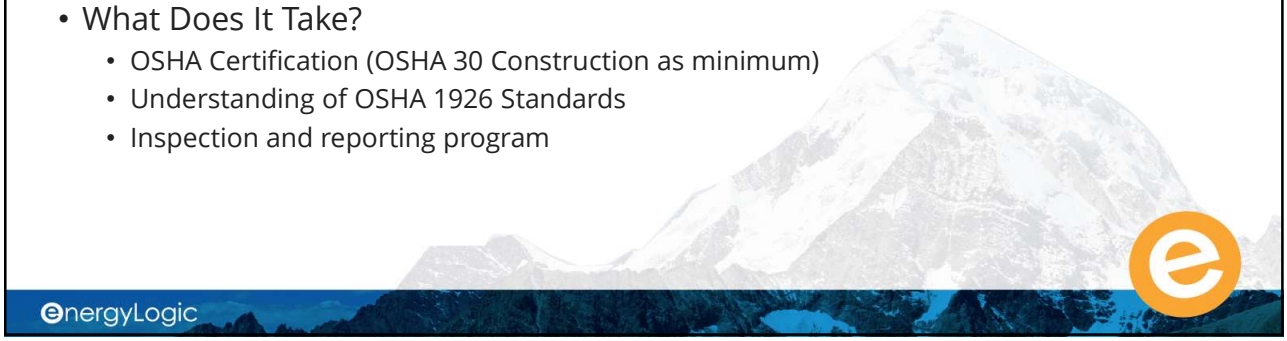
Safety

- Summary: Provide builder with a safety program to maintain compliance with relevant OSHA standards.
- Pros: Already on site, keeping people safe
- Cons: Not well aligned with mission, high risk, specialized training
- What Does It Take?
  - OSHA Certification (OSHA 30 Construction as minimum)
  - Understanding of OSHA 1926 Standards
  - Inspection and reporting program



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Third Party Builder Risk

- Summary: Inspection to reduce risk of construction defect litigation.
- Pros: Large focus on water management and durability, inspections can align with HERS inspections, visual only inspection
- Cons: High risk, similar margins to HERS ratings
- What Does it Take?
  - Additional training on key construction defects for your region
  - Inspection and reporting program
  - Preparation for potential future depositions

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Radon Inspection & Testing

- Summary: Inspection of key radon mitigation measures in the home and short-term testing for radon in home.
- Pros: Defined industry certification, large impact on healthy home goals,
- Cons: Failures can be difficult to fix post close, not required by code or programs (Yet), competition in market, state licensure
- What Does it Take?
  - Training and Certification from National Radon Proficiency Program or National Radon Safety Board
  - Colorado require licensing

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Sewer Scoping

- Summary: Inspection and documentation of home sewer performance using a flexible borescope camera.
- Pros: Profitable service, professional certification available, increase relationships with builder clients
- Cons: Alignment with mission?, sewers are gross, requires specialized equipment
- What Does It Take?
  - Take InterNACHI Certified Sewer Scope Inspector Class or equivalent
  - Purchase a borescope camera ($1,000 - $2,000)

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About EnergyLogic

EnergyLogic is an applied building science company that partners with building professionals to construct buildings that are efficient, healthy, and resilient.
We are based in Colorado and work worldwide.

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