“Top 10 Best Practices for Today’s Homebuilder”
Online Training Curriculum Outline

High Performance Home Introduction
- Poor performing home scenarios
- House as a system

Where’s the Market Headed?
- U.S. Building Impact
- Understanding Impacts
- The State of Green Building
- Code Updates and Policy Changes
- Zero Energy Homes

Benefits of Third Party Verification
- Role of Third Party Programs
- Quality Assurance
- Sales & Marketing Advantages
- Homeowner Benefits

Building Science Fundamentals
- Typical Weather Scenario
- Basic Principles of Physics
- Moisture Flows

Insulation
- Fundamental Natural Laws of Thermodynamics
- Three Modes of Heat Transfer
- Mechanisms of Thermal Flow
- Insulation Materials & Methods

Top Ten Elements of a High Performance Home

1. Design for Efficiency
   - Good: Continuous thermal boundary
   - Better: Add right sizing design & systems
   - Best: Add optimization with energy modeling

2. Superior Air Sealing
   - Good: Air Sealing (basic caulking and foaming)
   - Better: Fully continuous air barrier + blower door test with advanced caulking and foaming
   - Best: Exterior sheathing sealed (fluid applied, taped or glued sheathing)

3. High Performance Wall Systems
   - Good: Intermediate or advanced framing with blown-in insulation
   - Better: Single plate with staggered studs + blown insulation (≤ R-27) or 2x6 with exterior continuous insulation
   - Best: R-27 + Insulated sheathing or double stud with blown-in insulation
4. High R-Value Ceilings
   - **Good**: Standard truss with R-21 high density fiberglass batts or rigid insulation inserts + 1" vent channel at eaves
   - **Better**: Raised heel truss, parallel chord cantilevered truss
   - **Best**: True vaulted ceiling (I-joist) or insulated roof above attic

5. Windows
   - **Good**: Proper U-Value and Solar Heat Gain Coefficient (SHGC) for applications
   - **Better**: Window design (avoid too much glazing)
   - **Best**: Daylighting + high performance low U-Value

6. Ducts and Distribution
   - **Good**: Seal ducts with mastic
   - **Better**: Seal ducts with mastic and test
   - **Best**: Ducts inside or Ductless HVAC system

7. Fresh Air Ventilation
   - **Good**: Exhaust only
   - **Better**: Supply + exhaust w/ ECM blower motor
   - **Best**: Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV)

8. Lighting and Appliances
   - **Good**: Energy Star appliances
   - **Better**: Add heat pump dryer
   - **Best**: Add induction cooktop

9. Mechanical Systems
   - **Good**: High-efficiency ducted heat pump or condensing gas furnace
   - **Better**: Ductless heat pump, highest efficiency condensing gas furnace or inverter driven ducted heat pump
   - **Best**: Add heat pump water heater or condensing tankless gas water heater

10. Solar Energy
    - **Good**: PV Solar and Electric Vehicle (EV) ready
     - **Better**: Zero Energy (or ZE Ready)
     - **Best**: Positive Energy with Electric Vehicle (EV)

Local Third Party Programs & Incentives
- BetterBuiltNW.com Resources
- New Homes Performance Path
- Incentive Estimator Tool
- New Construction Utility Programs
- Home Certification Programs
- Types of Third Party Verifications

Process Improvement
- Quality Assurance
- Implementation, Quality Checklist, Quality Construction Chain
- What does the rater verify?

Conclusion
- Top 10 elements recap