




Transitioning from New Home Ratings to Home Performance Contracting

GreenHomes America
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Agenda

- 🏠 Overview of Home Performance Contracting (HPC)
- 🏠 Rater Roles vs Home Performance Contracting
- 🏠 Existing Homes
- 🏠 Before You Jump - Considerations
- 🏠 Fundamental Concepts of Home Performance Contracting
- 🏠 Different Approaches for being a Home Performance Contractor
- 🏠 The Home Performance Contracting Process
- 🏠 Project Examples
- 🏠 Recommendations

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A Home Performance Contractor Provides Solutions

As a Home Performance Contractor, GreenHomes America offers Fully Comprehensive Services:

- 🏠 Comprehensive Home Assessments (CHA)
- 🏠 Reduce Air Infiltration
- 🏠 Duct Sealing
- 🏠 Insulation
- 🏠 Replacement Windows
- 🏠 Indoor Air Quality systems
- 🏠 HVAC retrofit
- 🏠 Photovoltaics & Solar DHW






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Home Performance Contractor's ..?

- 🏠 are trained and equipped to diagnose existing homes to see where problems exist or may occur
- 🏠 use the “house as a system” approach and use special diagnostic tools, especially a blower door and infra-red camera, to evaluate homes & buildings
- 🏠 are specially trained contractors that evaluate homes using state-of-the-art equipment, recommend fully comprehensive improvements, and offer to have the improvements installed and verified.

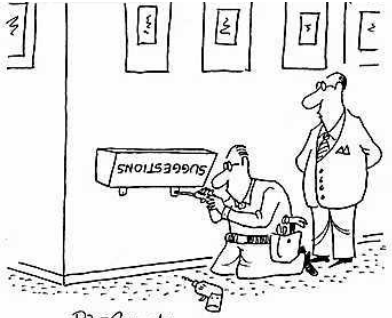



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What is or Who is a Home Performance Contractor ?

- 🏠 A One man/woman show?
- 🏠 Has 1 to 100 employees?
- 🏠 Subcontracts all work?
- 🏠 Subcontracts some work?
- 🏠 Performs all work “in-house”?



Dave Coverly...
"MAY I MAKE A SUGGESTION?"



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Home Performance Contracting is...?




ALL OF THE ABOVE!



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Rater vs HPC

<u>Rater</u>	<u>HPC</u>
<ul style="list-style-type: none"> ✓ Plan Review ✓ Recommendations ✓ Modeling/Ratings ✓ Field Inspections ✓ Program Paperwork Submission ✓ Builder ✓ New Construction ✓ Equipment 	<ul style="list-style-type: none"> ✓ Assessment ✓ Workscope Dev. ✓ Modeling/Savings ✓ Sale* ✓ Program Paperwork Submission ✓ Homeowner ✓ Existing ✓ Equipment




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Working in Existing Homes



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 **Existing Homes:**

1. **Customers can be challenging at times**
2. **You will find everything imaginable in existing homes**



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Home Performance Contractor vs. Energy Rater




Home Performance




New Construction




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What a Rater usually sees...





18-11-2002



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What a Home Performance Contractor sees...



11

What a Rater usually sees



12

What a Home Performance Contractor sees

13



What a Rater usually sees:

14



 **What a Home Performance Contractor sees:**



15 

 **What a Rater usually sees:**



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What a Home Performance Contractor sees:



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Working in Existing Homes

The National Electric Code:


- The National Electrical Code 2002 Article 394.12 clearly states that any type of insulation should not be installed over active knob-and-tube wiring.


BPI Shell Standards:

- Insulation may not be installed where live knob and tube wiring exists.





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Working in Existing Homes

- 🏠 Vermiculite is a naturally occurring mineral used in construction, insulation and gardening products.
- 🏠 By itself, Vermiculite is safe and plentiful.
 - ✓ Much of the vermiculite used as attic insulation was contaminated with a type of naturally-occurring asbestos fiber called “tremolite-actinolite”.
 - ✓ Vermiculite looks like shiny, small pieces of popcorn and is usually light-brown, grey or gold in color.
- 🏠 Most of the vermiculite mined in this country came from Zonolite Mountain in Libby, Montana (closed in 1990).



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Working in Existing Homes






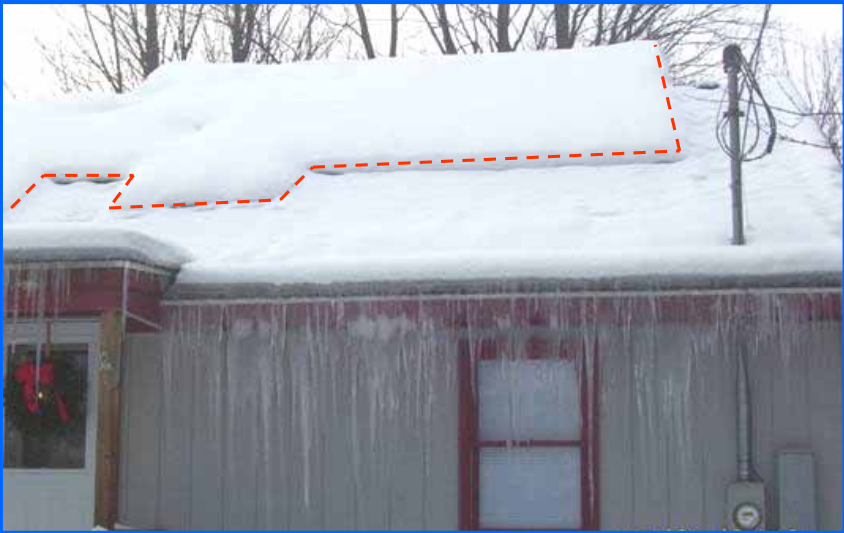

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 **Working in Existing Homes**




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 **Working in Existing Homes**




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Home Performance Contracting

Some Initial Decisions to be Made:


1. Are you located in a state where a program exists to help subsidize the work?
2. What is the demand for this service? With a program or without?
3. What type of marketing will you use? What about Networking?
4. How do you transition to Home Performance?
5. What services will you offer? And how will you deliver them?




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Home Performance Contracting



107 Million Existing Homes

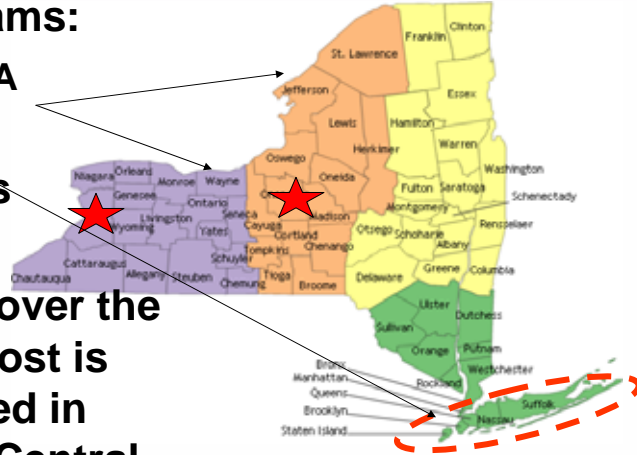


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Home Performance Contracting in New York

- 🏠 **Two Programs:**
 - NYSERDA
 - LIPA
- 🏠 **17,000 Jobs since 2001**
- 🏠 **Activity all over the state but most is concentrated in Western & Central NY**




🏠

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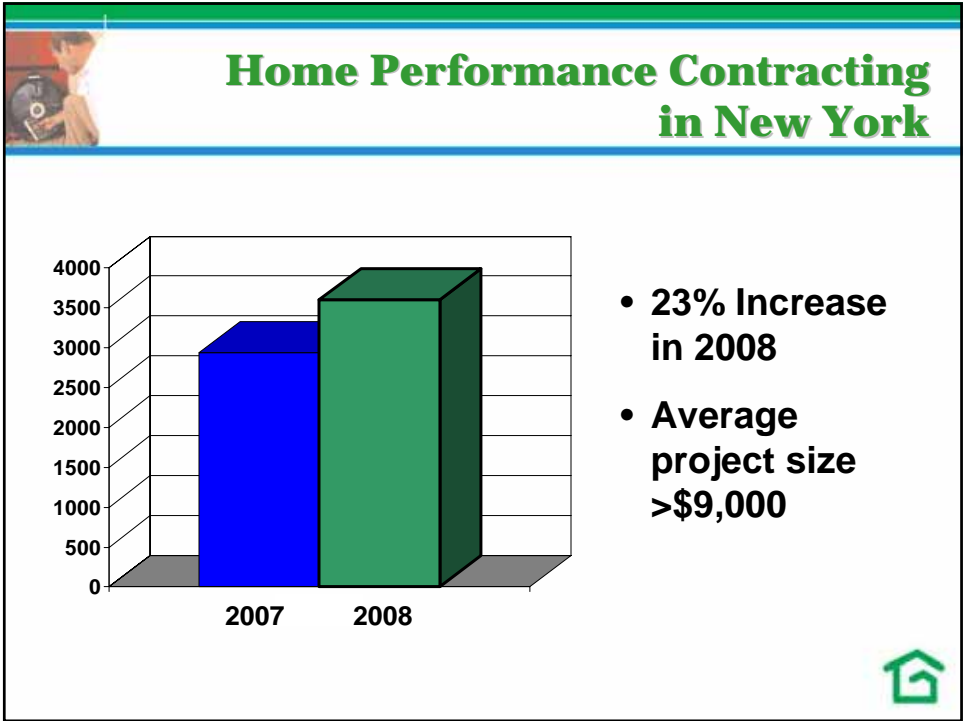
Program Benefits - NY

- 🏠 **Program Benefits Include:**
 - ✓ **Customer Incentive – Assisted Subsidy**
 - 80% of State Median Income and Below
 - Will pay up to 75% of Project (up to \$12,000)
 - ✓ **Customer Incentive – Low Interest Financing**
 - 5.99 % Unsecured Loan
 - ✓ **Customer Incentive – Homeowner Financing Incentive**
 - 10% of project up to \$3,000
 - ✓ **Contractor Incentives**
 - ✓ **COOP Advertising Incentives**



🏠

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-
- ### Program Benefits - NJ
- Program Benefits Include:**
 - ✓ **Customer Incentive – Tier I, II, III**
 - Tier III – Up to \$5,000 (25% heating savings)
 - Tier II – Up to \$2,000 or 3.99% financing
 - Tier I – Up to \$1,000 or 5.99% financing
 - ✓ **Contractor Incentives**
 - ✓ **COOP Advertising Incentives**
-
-



Program Can Be Complex


- 🏠 Paperwork/Process Intensive
- 🏠 Computer Modeling
- 🏠 Comprehensive Home Assessment (CHA) Requirement
- 🏠 BPI Certifications/Accreditations Required
- 🏠 Can Help Provide Quality Assurance:
 - ✓ Customer Perspective
 - ✓ Project Performance
 - ✓ BPI & Programmatic Standards
- 🏠 Training, Training, Training!




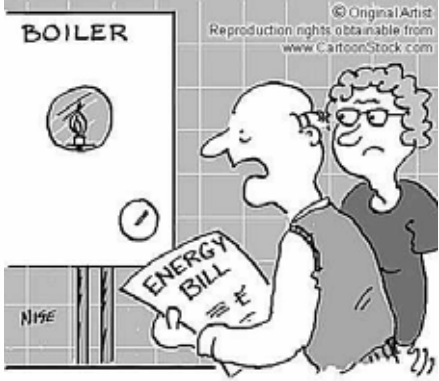
I'll be late for dinner, Dear




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Demand for Services

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Marketing



- 🏠 TV/Radio/Newspaper
- 🏠 Bingo Halls
- 🏠 **Networking...**

- 🏠 Truck Wraps
- 🏠 Direct Mail
- 🏠 Lawn Signs
- 🏠 Program People



🏠

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Network with the Home Performance Contractor's in Your Area

- 🏠 Get to know the Home Performance Contractors in your area
- 🏠 Identify Contractors that share your vision, passion and goals.
- 🏠 Let them know how you can help them
- 🏠 Simplify the process for them while improving Quality



🏠

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Home Performance Contracting

Fundamental Concepts:

1. Do No Harm
2. House as a System
3. Comprehensive Approach

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<http://bpi.org/>

Standards for:

1. Building Analyst
2. Shell Work
3. HVAC Work

Technical Standards *Building Analyst I*

BUILDING PERFORMANCE INSTITUTE
TECHNICAL STANDARDS
FOR CERTIFIED BUILDING ANALYST I

Health and Safety

All technicians performing diagnostic tests, inspections, or installations, must have access to all necessary personal safety equipment required by OSHA. Required safety equipment includes, but is not limited to:

- ✓ Fitted respirators with canister filters
- ✓ Dust masks
- ✓ Gloves
- ✓ Protective clothing
- ✓ Safety glasses
- ✓ Hard hats, as required

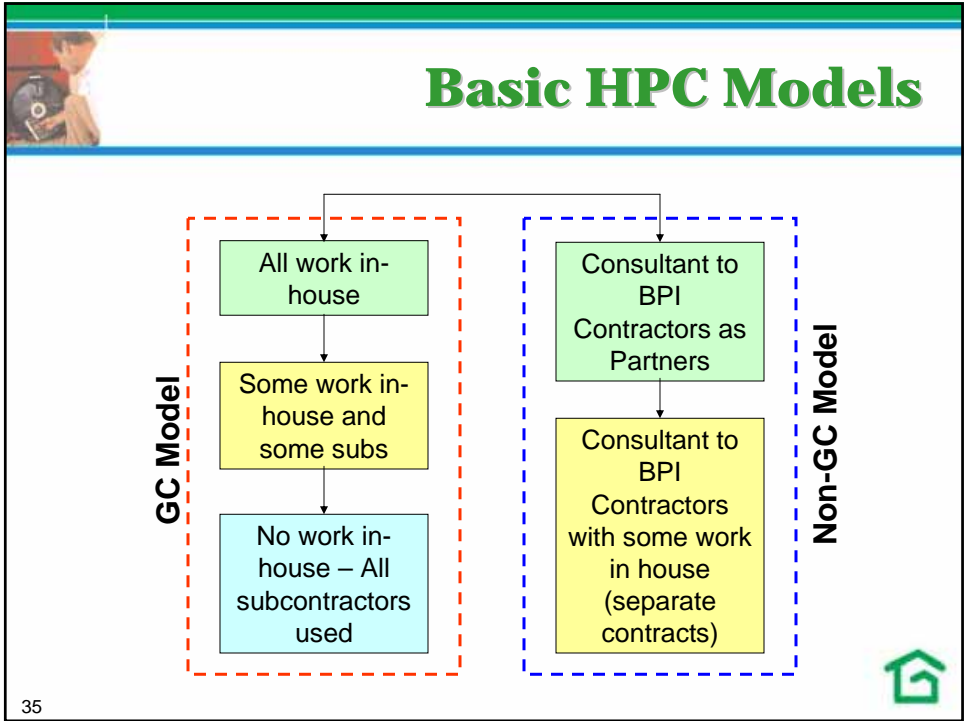
Technicians must be trained in proper use and applications for these devices and must adhere to OSHA regulations when on the job site.

All hand tools, power tools, ladders, and diagnostic equipment must be handled and used in a safe manner and kept in good working condition. Equipment and diagnostic tools must be maintained and calibrated according to manufacturer's specifications.

A copy of the Material Safety Data Sheets (MSDS) for all materials used on the job and installed in the home, must be kept on each crew vehicle and made available to all workers and clients upon request.

Where the presence of asbestos, lead, mold and/or other potentially hazardous material is known or suspected, all relevant state and federal (EPA) guidelines must be followed to ensure technician and occupant safety. Blower door depressurization tests may not be performed in homes where there is a risk of asbestos becoming airborne and being drawn into the dwelling.

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General Contractor

Work done “In House”:


- Higher Risk
- Higher Profits
- High Level of Quality Control
- High Insurance Costs
- Ultimately Responsible

Most of work sub-contracted out:

- Somewhat Less Risk
- Lower Profits
- Somewhat Less Control over Quality
- High Insurance Costs
- Ultimately Responsible
- Need Good, Reliable Sub-contractors


“Who taught the new guy how to use the Brad Nail Gun?”

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Working with Partners


- 🏠 **Consultant to BPI Contractors as Partners:**
 - Lower Risk
 - Less Profits
 - Little Control over Quality
 - Lower Insurance Costs
 - Not Responsible for Work
- 🏠 **Consultant to BPI Contractors as Partners with some work "in house":**
 - Medium Risk
 - Mid-Range Profits
 - Moderate Level of Control over Quality
 - Lower Costs
 - Partly Responsible for Work
 - Helps to have Good, Reliable Sub-contractors



"Guess what you forgot to take with you this morning!"





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Good Subcontractors

- 🏠 **Some sub-contractors are more interested in their bottom line than customer satisfaction**
- 🏠 **Pricing can be difficult with sub-contractors**
- 🏠 **Are they BPI accredited?**






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Overview of the Process

1. Customer Calls/CHA is Scheduled
2. CHA is Completed (test-in)/Scope of Work Developed
3. Contract is Signed for Work
4. Customer Applies for Financing/Grants (if applicable)
5. Computer Model is Generated/Report Created
6. Project Workscope sent to Program for Approval
7. Workscope/Financing is Approved
8. Work is scheduled (Insulation & AS, Windows, HVAC, Renewables, etc.)
9. Work Completed
10. Project Test-out/Punchlist Items
11. Program QA



The Comprehensive Home Assessment

- 🏠 Conduct a comprehensive home assessment of all energy features of the home
- 🏠 Diagnostic testing for Ambient CO, gas leaks, CO, spillage, draft, WCD and air leakage are completed
- 🏠 Any health & safety problems are identified
- 🏠 Recommendations for improved health & safety or increased energy efficiency are presented to the customer
- 🏠 Sales process can be tricky (SIR)
- 🏠 **Listen to the customer!!!**



The CHA

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Diagnostic Testing

- 🏠 Ambient CO
- 🏠 Natural Gas/Propane Leaks
- 🏠 Worst Case Depressurization
- 🏠 CO in the Vent
- 🏠 Draft
- 🏠 Spillage
- 🏠 Test under Natural Conditions (if Necessary)
- 🏠 Blower Door vs MVG
- 🏠 Infrared Camera
- 🏠 Wall Scope

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Identify H&S Problems

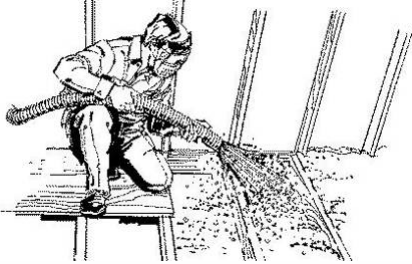
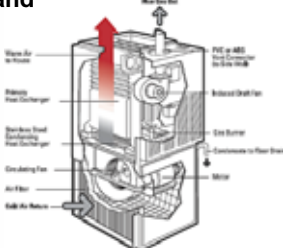

- ✓ High Ambient CO
- ✓ Natural Gas/Propane Leaks
- ✓ Worst Case Depressurization exceeds BPI Standards
- ✓ High CO in the Vent
- ✓ Weak Draft
- ✓ Spillage > 60 Seconds
- ✓ Blower Door less than MVG or less than 70% of MVG
- ✓ Moisture Damage - Mold
- ✓ Unvented Space Heaters
- ✓ Asbestos – Vermiculite
- ✓ Live Knob & Tube Wiring

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Identify Energy Saving Opportunities

- 🏠 Attic Insulation & Air Sealing
- 🏠 Wall Insulation
- 🏠 Windows
- 🏠 Heating System
- 🏠 Duct Sealing
- 🏠 Domestic Hot Water
- 🏠 Cooling System
- 🏠 General Air Sealing
- 🏠 Rim/Band Joist Air Sealing and Insulation
- 🏠 Mechanical Ventilation
- 🏠 Lighting
- 🏠 Appliances
- 🏠 Water Conservation
- 🏠 Renewables
- 🏠 CO/Smoke Alarms

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Workscope Development

Develop the workscope based on:

1. Customer Wish List
2. Visual Inspection
3. Diagnostic Testing
4. Health & Safety Problems
5. Cost-effectiveness
6. Eligible Measures
7. Existing Constraints and Conditions



Comfort Problems

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TREAT Software


The screenshot shows the TREAT software interface with a 'Project Index' on the left and a main form for entering project information. A table at the bottom displays energy usage data for a building model.

Calculate Model	Electricity		Natural gas		Fuel Oil		Heating Reference Temperature °F
	Heating kWh/year	Cooling kWh/year	Heating Therms/year	Base Load Therms/year	Heating Units/year	Base Load Units/year	
Building Model	0.0	0.0	3,943.2	1,677.6	350.4		62
Billing Date							
Percent Difference							


Required programmatic software can be difficult for Home Performance Contractors to run and submit


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The CHA Report





HOME PERFORMANCE WITH ENERGY STAR



COMPREHENSIVE HOME ASSESSMENT

Prepared By: Green Homes America

About Home Performance with ENERGY STAR


Over 3 billion are spending more money than ever to heat and cool their homes. Most homeowners are not getting the comfort they are paying for. Many homes suffer from cold spots, rooms that are too hot or too cold, too noisy, drafts, leaking air, and mold and radon problems. They aren't the common signs that the home is not properly insulated or that the heating system is improperly balanced, or that mold air in the house is not being effectively controlled. Many homes are simply leaving the money.

Now there's something you can do about it. The Home Performance with ENERGY STAR initiative is sponsored by the Long Island Power Authority (LIPA) Green Energy Institute. Contractors participating in this initiative have successfully completed a comprehensive data evaluation to home performance diagnosis. Each participating contractor has been accredited by the Building Performance Institute (BPI), a nationally recognized organization for building science technology that sets the standards for assessing and improving the energy performance of homes.

About Your Home's Assessment

Your Home Assessment is customized to identify the particular needs of your home based on an analysis. The information that your Contractor gathered has been entered into a computer software package that helps your Contractor determine the most cost-effective measures you can take to make your home more comfortable and comfortable. The report outlines that analysis, potential recommended home repairs, and helps you determine the best improvements for your home.

XXXXXXXXXXXXXXXXXXXX



PREPARED FOR:

Empty Space
217 Laurel Ln
Port Jefferson, NY 11777-2400

BUILDING INFORMATION:

Conditioned area: 1100 sq.ft.
Basement above grade: 7
Building volume: 3300 cu.ft.

PREPARED BY:

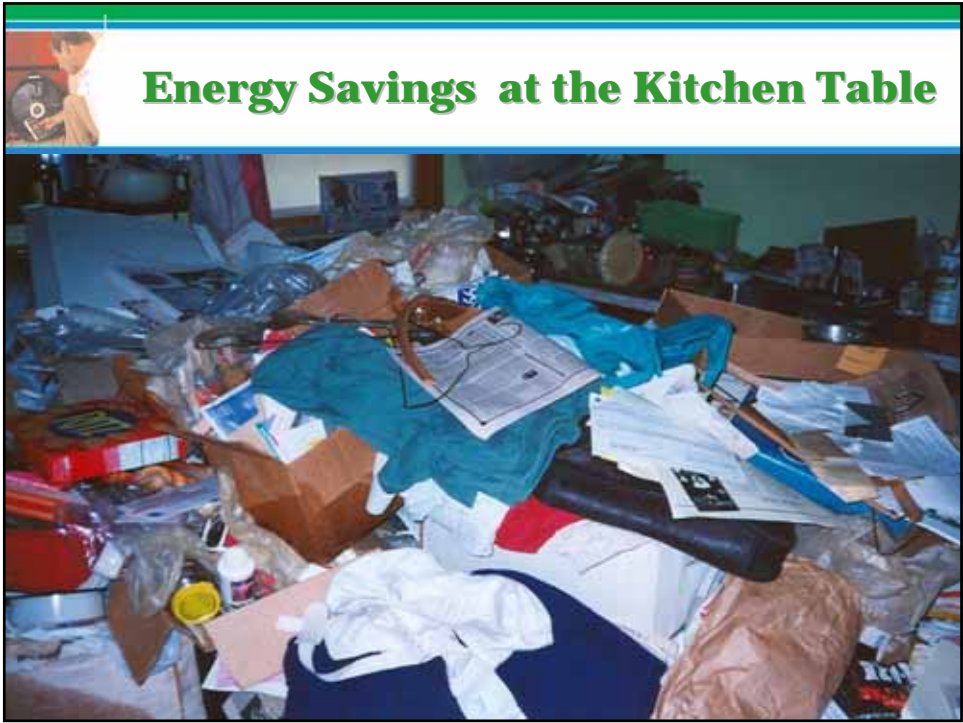
Green Homes America
c/o Edie Rogers
816 South Weymouth Lane
Ston Brook, NY 11790
(877) 607-2333
info@greenhomesamerica.com


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Energy Savings at the Kitchen Table









At the Kitchen Table...


- 🏠 Educating the Customer
- 🏠 Presenting Findings & Recommendations
- 🏠 Explain how the work would be done
- 🏠 Presenting Program Benefits (Grants, Loans)
- 🏠 Presenting Workscope Packages & Costs
- 🏠 Presenting Benefits of the Project (Comfort, Savings, Health & Safety, etc.)
- 🏠 Loan Application



Customer Referrals 🏠



Listen to the Customer



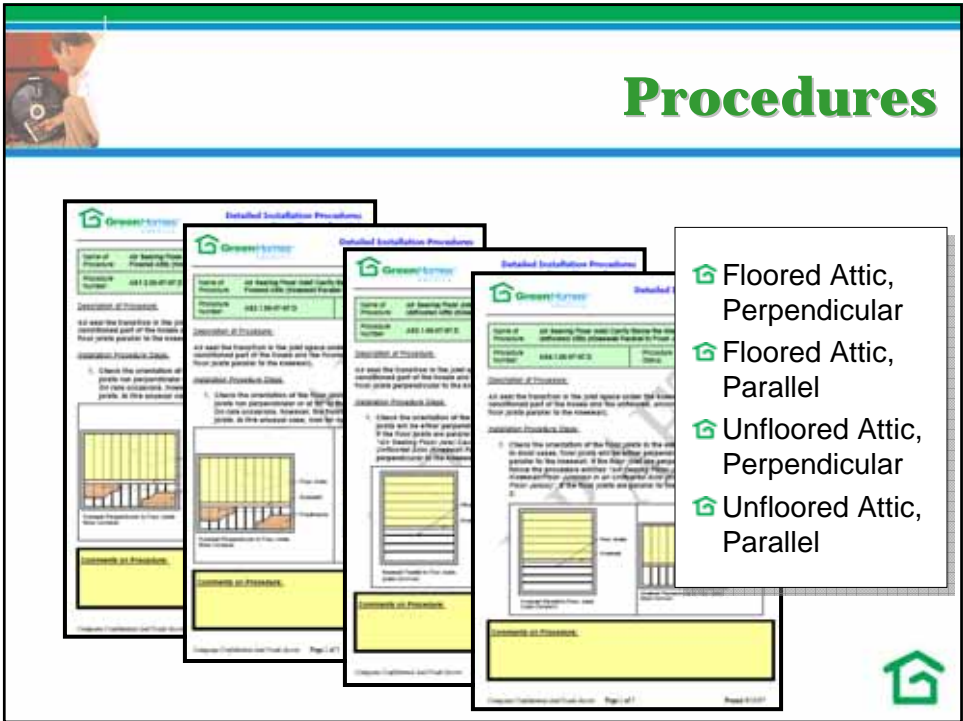
Toog

"Ok, how about this motto: 'If you are unhappy for any reason, we will feel really bad'."





🏠



Completing the Work



Procedures

-  Floored Attic, Perpendicular
-  Floored Attic, Parallel
-  Unfloored Attic, Perpendicular
-  Unfloored Attic, Parallel

Insulate Kneewall

Dense Pack with Polystyrene

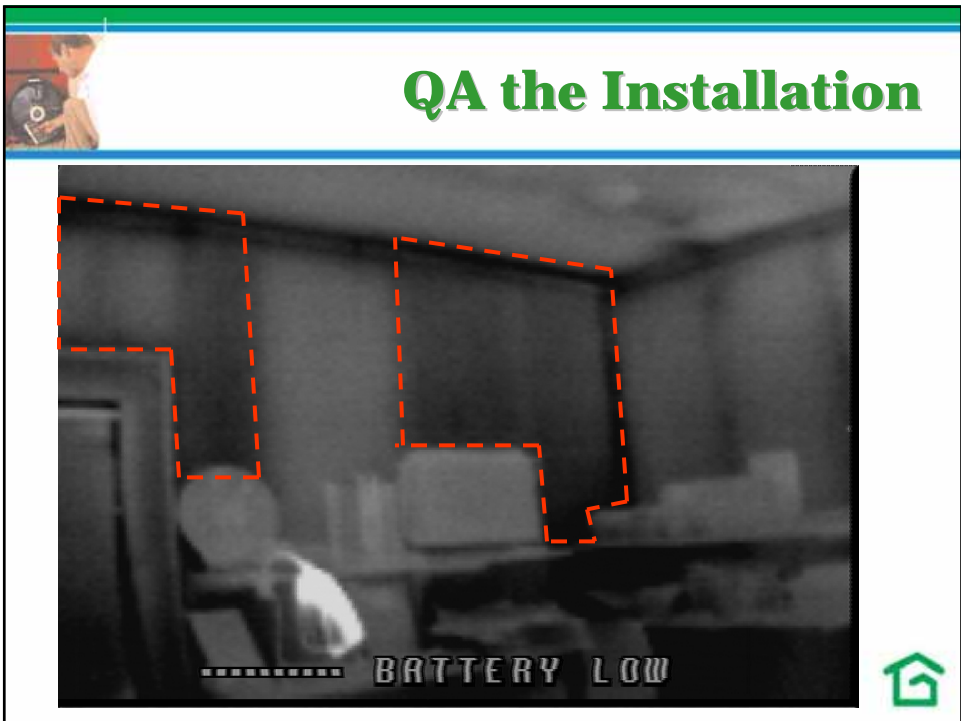
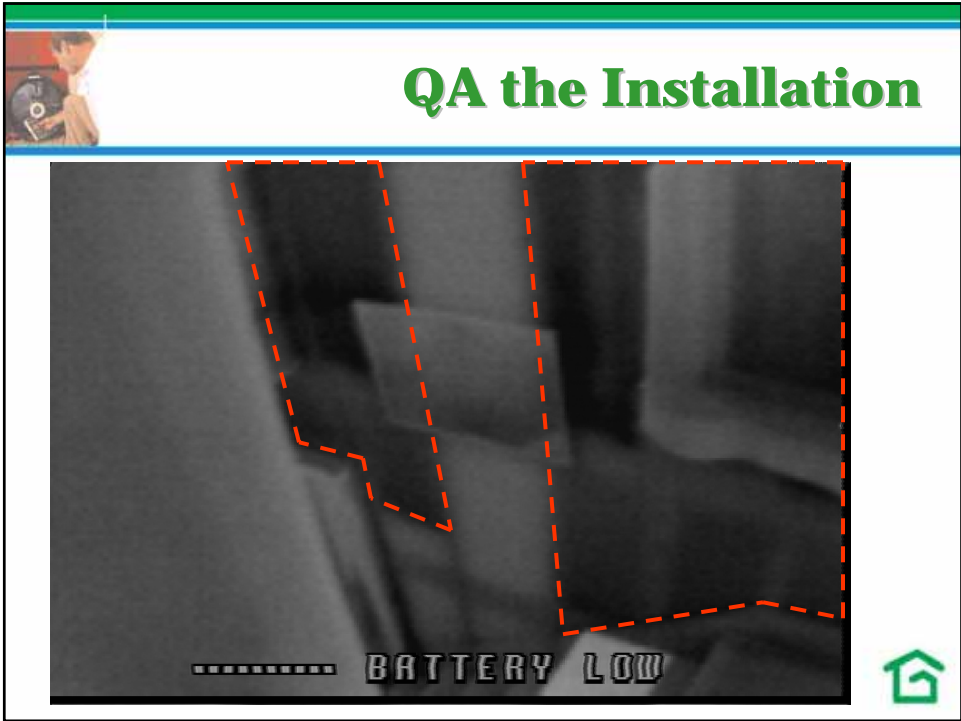
Dense Pack with Air Barrier


QA the Installation

This area is not airsealed OR insulated – bathroom is visible through attic

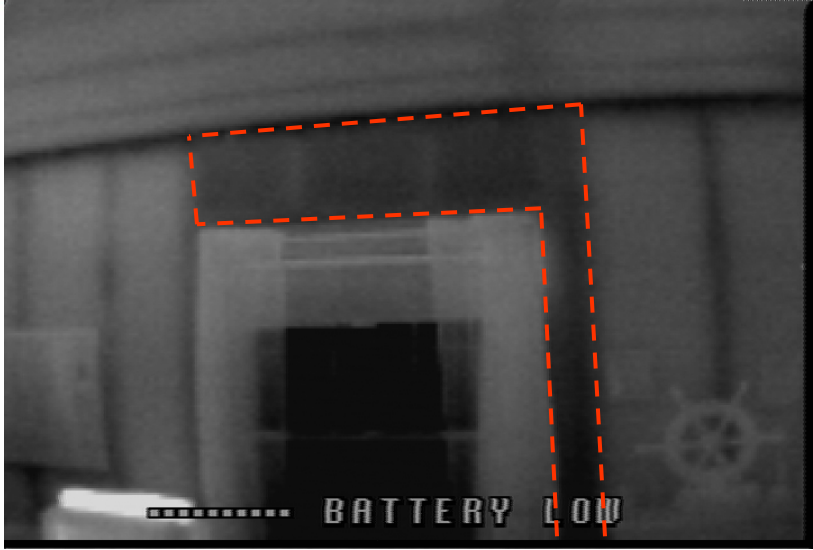


Quality Work:

1. Measures Installed Correctly?
2. Neatness, Professionalism Count
3. Returning to re-install measures is expensive
4. Do the little things right!







QA the Installation


QA the Installation

Floor is about ½ full of insulation in most places




 **Help provide the framework for quality installations:**

1. Customer Satisfaction
2. Project performance
3. Program and BPI Standards




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The Test-out

- 🏠 Visual Inspection of ALL Installed Measures
- 🏠 Diagnostic testing to verify home meets all BPI Standards
- 🏠 Diagnostic testing to measure air leakage reductions
- 🏠 IR Scans (when necessary)
- 🏠 Customer feedback on the job
- 🏠 Customer Referrals



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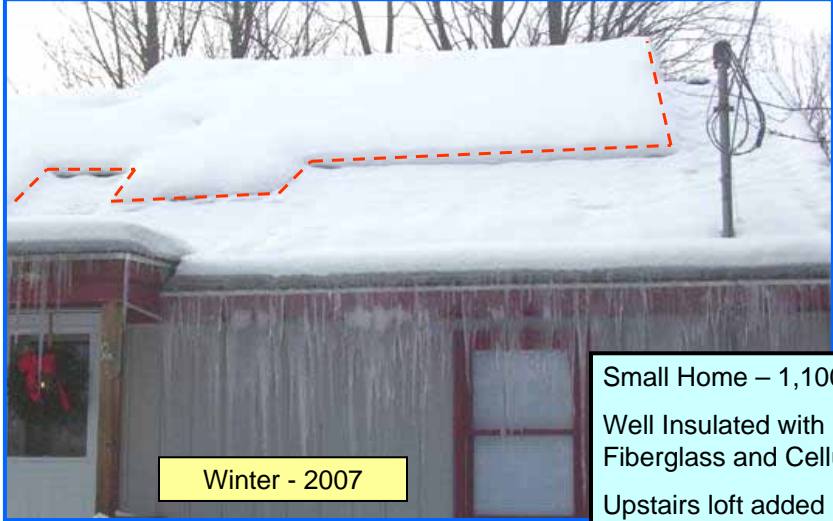
First Job Sold!

90% Forced Air Furnace	\$3650.00
Attic Insulation and Air Sealing (1200sqft)	\$3000.00
3 Windows	\$1050.00
	\$7700.00
Contract Signed.	
Received an additional contractor incentive: 5% (\$385.00)	
Net-profit: \$600+ 400 + 450 = \$1450.00	
	<u>\$385.00</u>
	\$1785.00




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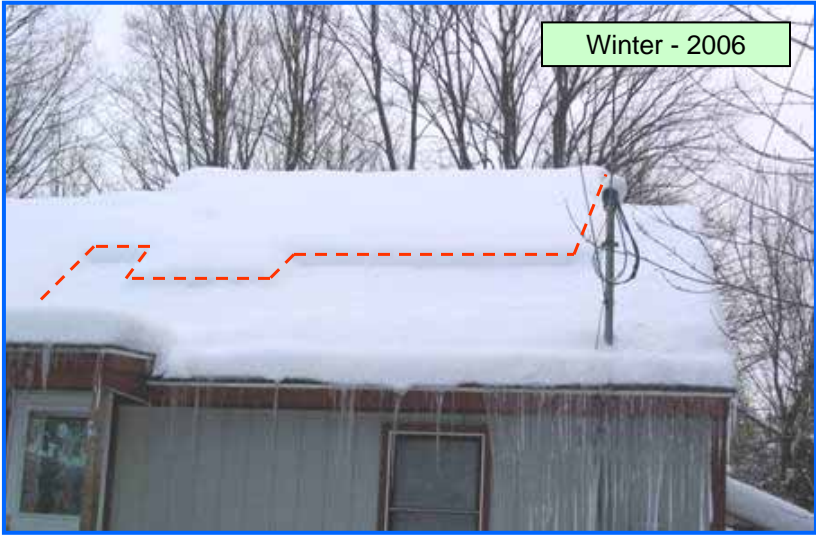
 **Case Study – Loft Addition**




Small Home – 1,100 sf
Well Insulated with
Fiberglass and Cellulose
Upstairs loft added

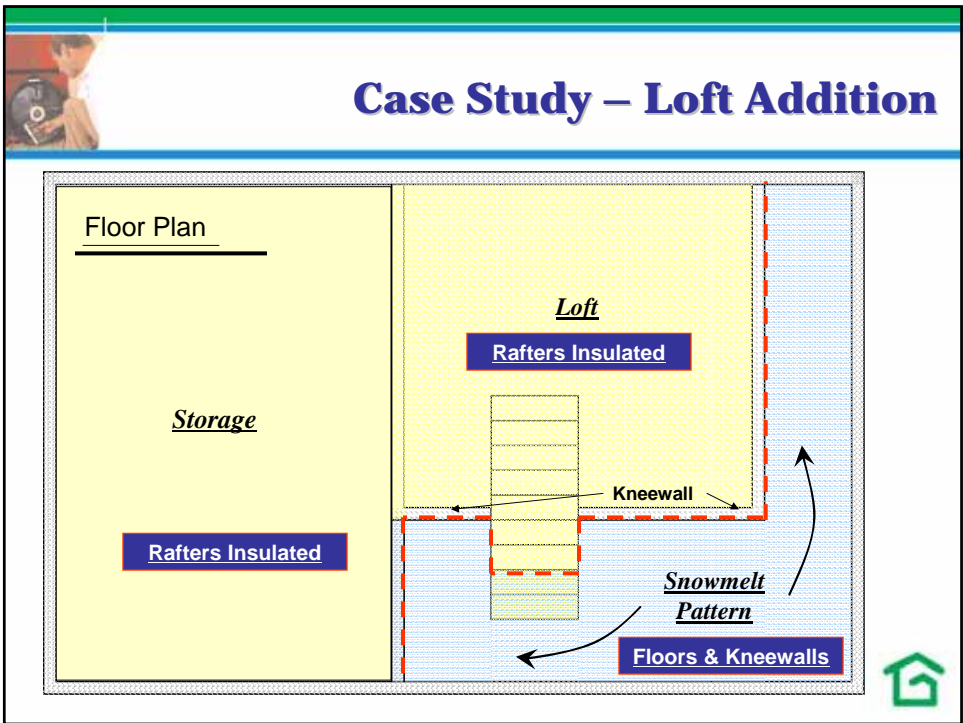
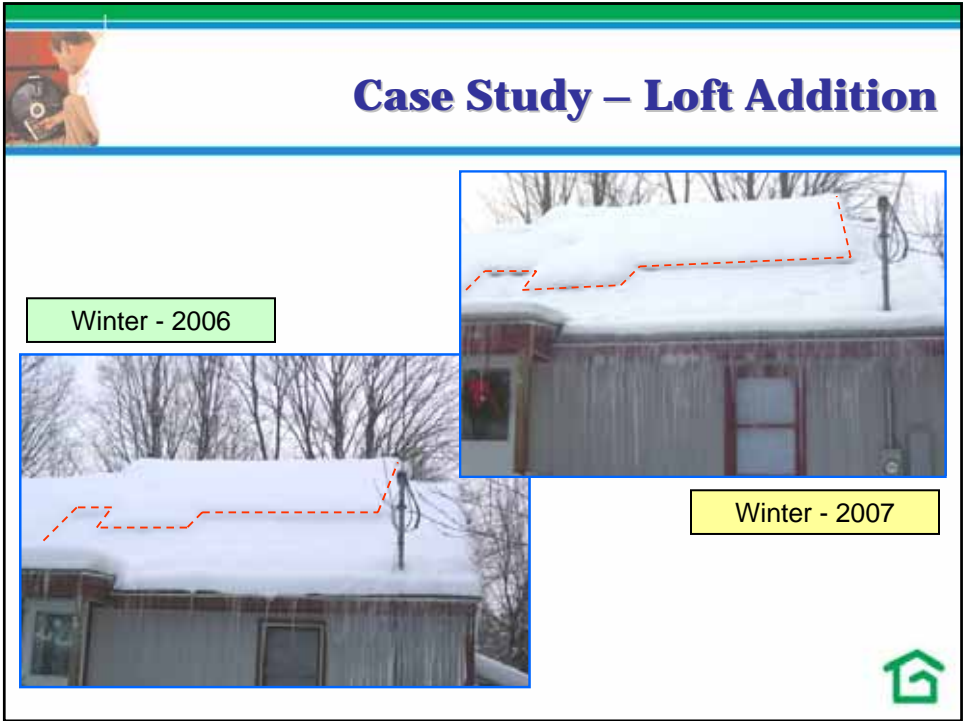
Winter - 2007

 **Case Study – Loft Addition**

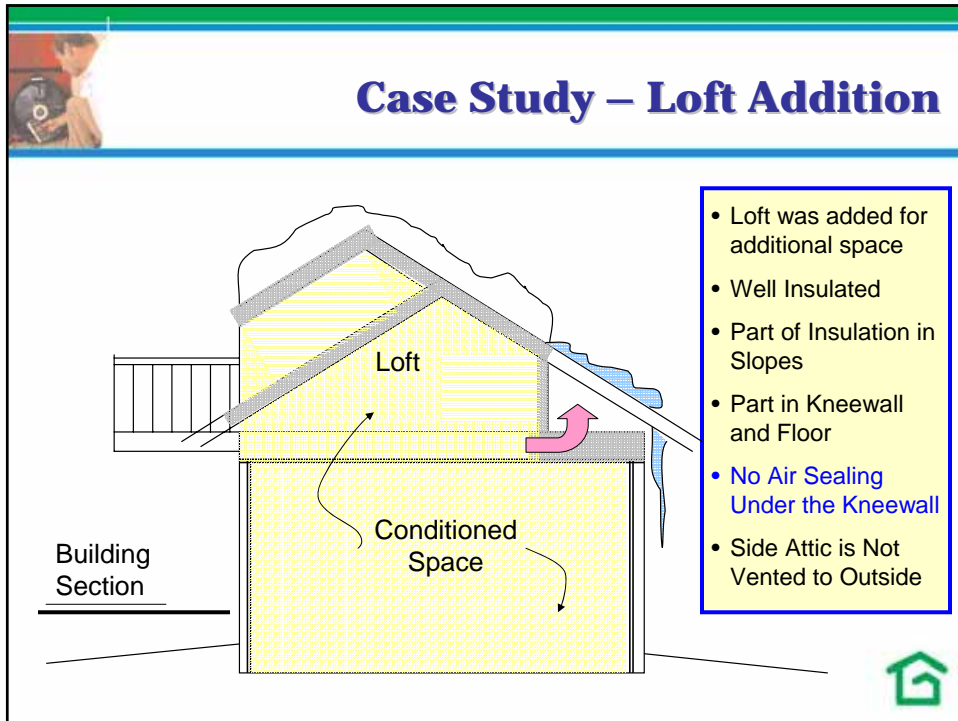


Winter - 2006

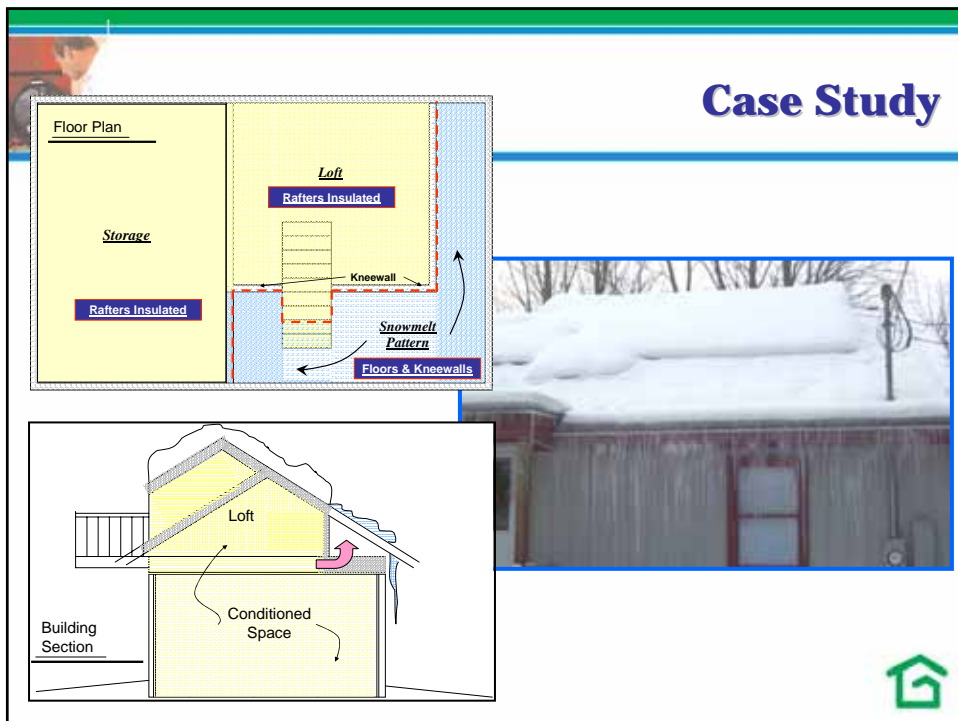




Case Study – Loft Addition



Case Study




Case Study – Loft Addition

1. Sealed Under Kneewall


2. Dense-packed rafters here

3. Added a gable vent

Diagram Labels: Floor Plan, Loft, Rafter Insulated, Storage, Kneewall, Snow Pattern, Floors & K



Case Study – Loft Addition



Case Study – Loft Addition

- Dense packed rafter
- Fiberglass Blocker
- Concrete Block Wall

Wall Section 1

- Loose-filled Attic
- Fiberglass Blocker
- Concrete Block Wall

Wall Section 2

Case Study


Foamed the top of the block here

- Dense packed rafter
- Fiberglass Blocker
- Concrete Block Wall

Wall Section 1


- Loose-filled Attic
- Fiberglass Blocker
- Concrete Block Wall

Wall Section 2



Perform Assessments for other Home Performance Contractors

- ✓ BPI Heating contractor talks to a customer and explains the program.
- ✓ Refer's client to you.
- ✓ You perform the comprehensive home assessment.
- ✓ Heating Contractor would pay a fee for the assessment.
- ✓ If insulation work was needed – you would perform the work;
- ✓ Smaller heating system due to the increased insulation
- ✓ There would be two contracts one with you and one with the BPI heating contractor.
- ✓ You would input the client into the program software and receive any contractor incentives from the program.



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How to become a “convert”

- 🏠 Network, Network, Network
- 🏠 Start by Partnering then GC
- 🏠 Learn about Programs
- 🏠 Training Courses for BPI Certs
- 🏠 Learn about Pricing – Don't Underestimate Ancillary Costs
- 🏠 Lead Generation & Sales
- 🏠 Maintain Quality Work at ALL Cost

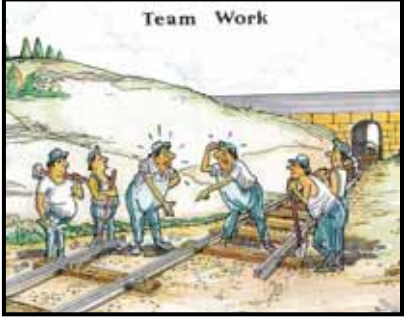




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Final Thoughts

- 🏠 Americans are 5 percent of the world's population, yet consume 26 percent of the world's energy.
- 🏠 Americans use an average of 12,133 kilowatt-hours of electricity each year, almost 9 times greater than the average for the rest of the world.
- 🏠 An average of 23,000 pounds of carbon dioxide are emitted annually in each American home.
- 🏠 The United States consumes about 17 million barrels of oil per day which is equivalent to 44,625,000 gallons of oil used during this presentation.
- 🏠 *All of us help change this picture one house at a time.*

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Questions???



“Well gentlemen, any suggestions?”

*Any
Final
Questions?*



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AMERICA



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