ComfortableHomes.com
Air Conditioning & Heat

Who is Jim Price and who cares?

How I got here and why it matters!

ComfortableHomes.com
Air Conditioning & Heat

Business with a Social Purpose

Our innovative approach enhances customer comfort, assures a healthier future with, clean air, clean water, conservation of resources, while implementing cost effective energy strategy for a more sustainable world.

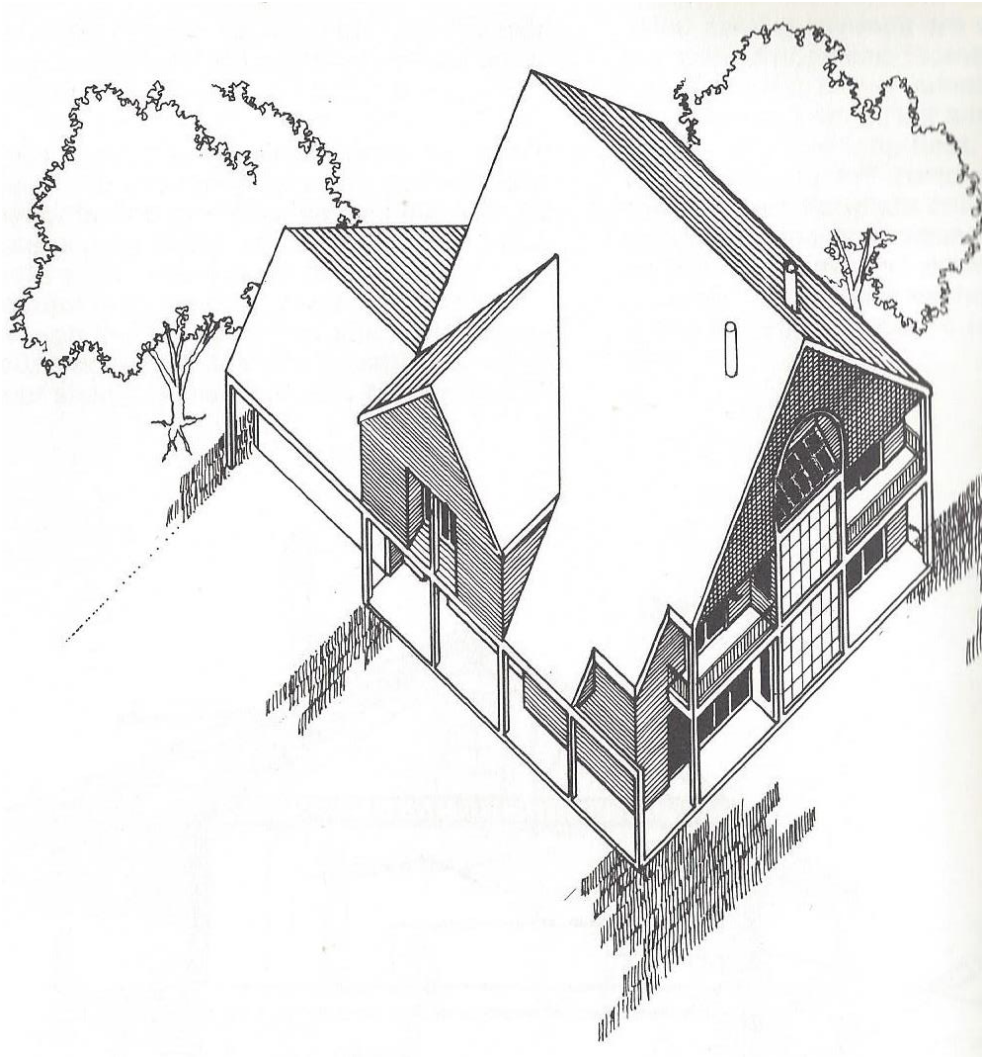
At 19 I insulated houses for a summer job to pay tuition at Seton Hall University.
I was paid piecework.
The more I installed the more I was paid.
KEY LESSON IN LIFE!

I had:
NO Skill.
No Knowledge.
Two Weeks
Training.

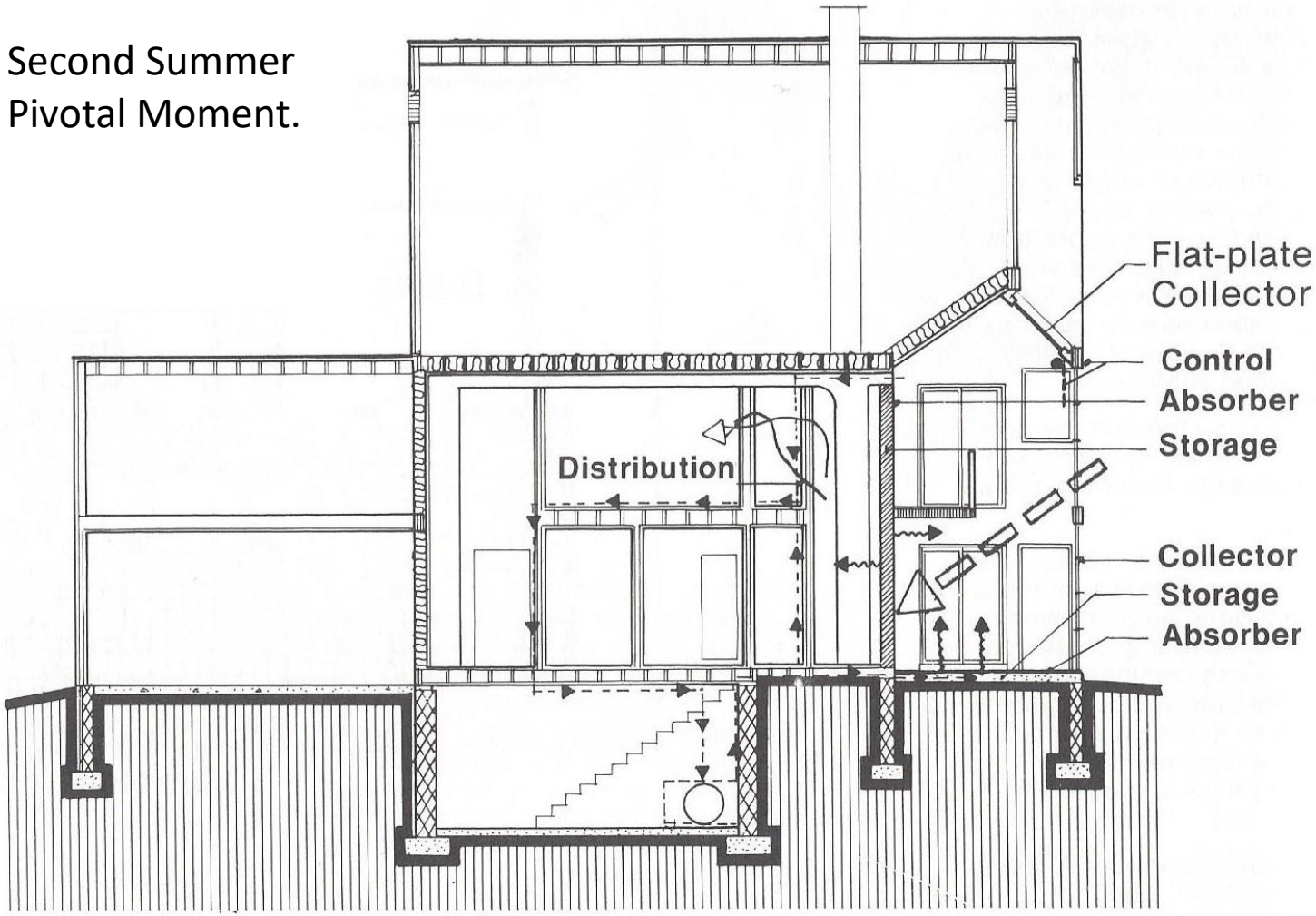
I was a tall fast,
skinny kid who
needed money.

Comfortable Homes 908-642-8394

Foxboro Massachusetts Passive Solar Home 2,443 square feet heated area.



Second Summer
Pivotal Moment.



- I Graduated from Seton Hall.
- 20 years in Corporate America.
- Got Married.
- Became a Father.
- Very conventional life.
- Became a victim of Business Consolidation and my customers went away.
- Got Divorced.
- I wanted a business that couldn’t be outsourced.
- 2005 I Decided to start a Solar company.
- Searched for knowledge. Vermont Solar Fest.
- 2005 Enrolled in Electrical School 5 days a week fast track for a total of 380 hours of formal training.
- 2006 I enrolled in Photovoltaic Design and Installation training with Solar Energy International.
- Went to the clean energy meeting September 18, 2006 to find out the 2007 Solar incentives. Suspended for 3 years.

Record of Completion

Presented the 15th day of September, 2006
This hereby certifies that

James W. Price

has successfully completed a 5 day workshop in

Photovoltaic Design & Installation

Director: Johnny Weiss

SOLAR ENERGY INTERNATIONAL
Renewable Energy Education and Sustainable Development
PO Box 715, Carbondale, CO 81623 • 970-963-8855 • www.solarenergy.org

This workshop has been approved for 40 NABCEP training hours.

- Joe Mizzy invited me to Home Performance with Energy Star a few weeks later.
- I Pivoted my business Aspirations and became a Home Performance Contractor.
- I thought I knew the insulation business. HA! HARDLY!
- 2007 I was BPI Certified.
- 2007 went to work completed 3 of the first 6 houses done in NJ's Home Performance with Energy Star Program.
- 2007 I hired HVAC Contractors to install ductwork and found out they were ignorant of quality work.
- 2007-2008 Enrolled in HVAC school Somerset County Technical Institute. Night school 4 nights a week.
- 2008 8 of next 14 houses in NJ.

- When I started there was very little local training so, I flew all over the country taking training by AFFORDABLE COMFORT (ACI). Cleveland, Baltimore, Colorado, Saratoga New York
- Affordable Comfort taught agency people and contractors how to do the work properly. I paid extra to go to the pre-conference training how to do the work.
- The only problem was is most contractors didn't attend. Agency people learned what were the best methods and contractors couldn't meet those standards. Which created friction.
- I was frequently the only contractor from NJ who attended. To this day I know many agency people across the country because of my attendance to those conferences.

- Today multiple organizations have merged with ACI to become BUILDING PERFORMANCE ASSOCIATION (BPA).

HVACR CONTRACTORS REQUIRMENTS Prior to 12-31-2005:

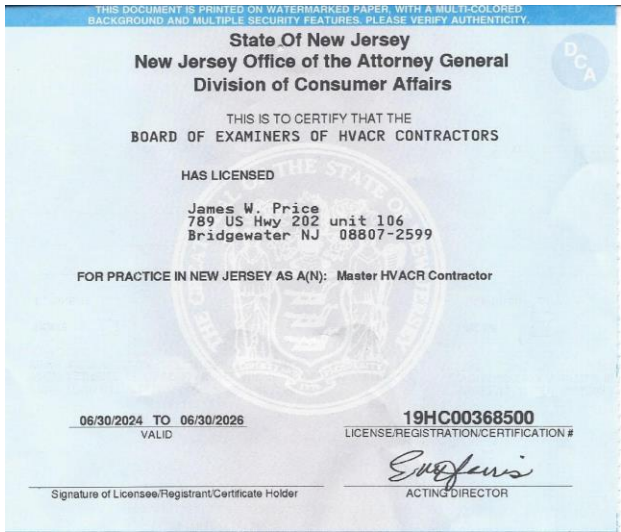
Tax ID (EIN - Employers Identification Number).
Business Registration with the state.
General liability Insurance.
Universal EPA 608 Certification.

No Formal Training Required.
No apprenticeship program required.

2014 HVAC LICENSE REQUIRED

Anyone who could prove they were already in the HVAC business could apply for and be granted a license. We are all were grandfathered in. Some office staff were granted licenses.
Prior to 2014 no one in the business was required to have any training.

Formal Training Required.
5 Year apprenticeship program required.
Must pass 2 licensing exams, Business & Law exam. HVACR trade exam.
Business Registration with the state.
General Liability Insurance.
Workman's Compensation Insurnace.
Surety Bond.
Universal EPA 608 Certification.
Tax ID (EIN)


THIS DOCUMENT IS PRINTED ON WATERMARKED PAPER, WITH A MULTI-COLORED BACKGROUND AND MULTIPLE SECURITY FEATURES. PLEASE VERIFY AUTHENTICITY.

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
BOARD OF EXAMINERS OF HVACR CONTRACTORS

HAS LICENSED

James W. Price
789 US Hwy 202 unit 106
Bridgewater NJ 08807-2599

FOR PRACTICE IN NEW JERSEY AS A(N): Master HVACR Contractor

06/30/2024 TO 06/30/2026
VALID

19HC00368500
LICENSE/REGISTRATION/CERTIFICATION #

Signature of Licensee/Registrant/Certificate Holder

ACTING DIRECTOR

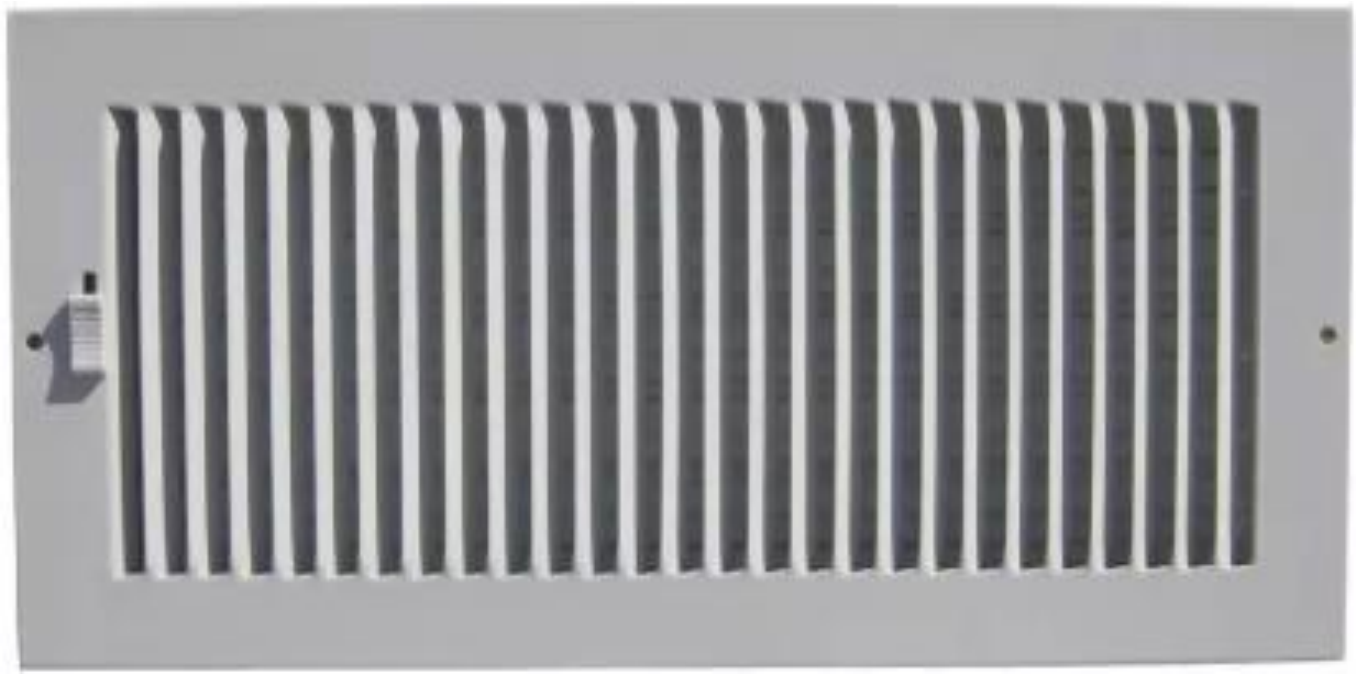
Home Builders use the Cheapest Systems Guaranteeing the Lowest Quality!

Performance of Equipment versus Cost

Every Quote **IS NOT EQUAL!**

Hart and Cooley High Performance $60
14 feet of through from ceiling to floor.

Lowest Cost Wall Register Lowest Performance $4
No through from ceiling to floor. Zero Quality Performance.



Chandler Von Schrader

BUILDING PERFORMANCE INSTITUTE INC.

Be it Known That

James W. Price

has successfully completed a comprehensive evaluation and is certified as a

Building Analyst Professional

as of February 07, 2007

Expires: 2/7/2010

Laverne Dalgleish
Chairman of the Board

BUILDING PERFORMANCE INSTITUTE INC. · HEALTH AND SAFETY, DURABILITY, ENERGY EFFICIENCY, COMFORT · BPI

Mathew Anderson
Director of Certification and Accreditation

BUILDING PERFORMANCE INSTITUTE INC.

Be it Known That

James W. Price

has successfully completed a comprehensive evaluation and is certified as a

Envelope Professional

as of February 07, 2007

Expires: 2/7/2010

Laverne Dalgleish
Chairman of the Board

BUILDING PERFORMANCE INSTITUTE, INC. — BPI — HEALTH AND SAFETY, DURABILITY, ENERGY EFFICIENCY, COMFORT

Mathew Anderson
Director of Certification and Accreditation

BUILDING PERFORMANCE INSTITUTE INC.

Be it Known That

James W. Price

has successfully completed a comprehensive evaluation and is certified as a

Heating Professional

as of February 07, 2007

Expires: 2/7/2010

Laverne Dalgleish
Chairman of the Board

BUILDING PERFORMANCE INSTITUTE INC. BPI HEALTH AND SAFETY, DURABILITY, ENERGY EFFICIENCY, COMFORT

Mathew Anderson
Director of Certification and Accreditation

95% of the Equipment is replaced without a load calculation. It is just swapped with what was there.

WHY?

100,000 Btuh

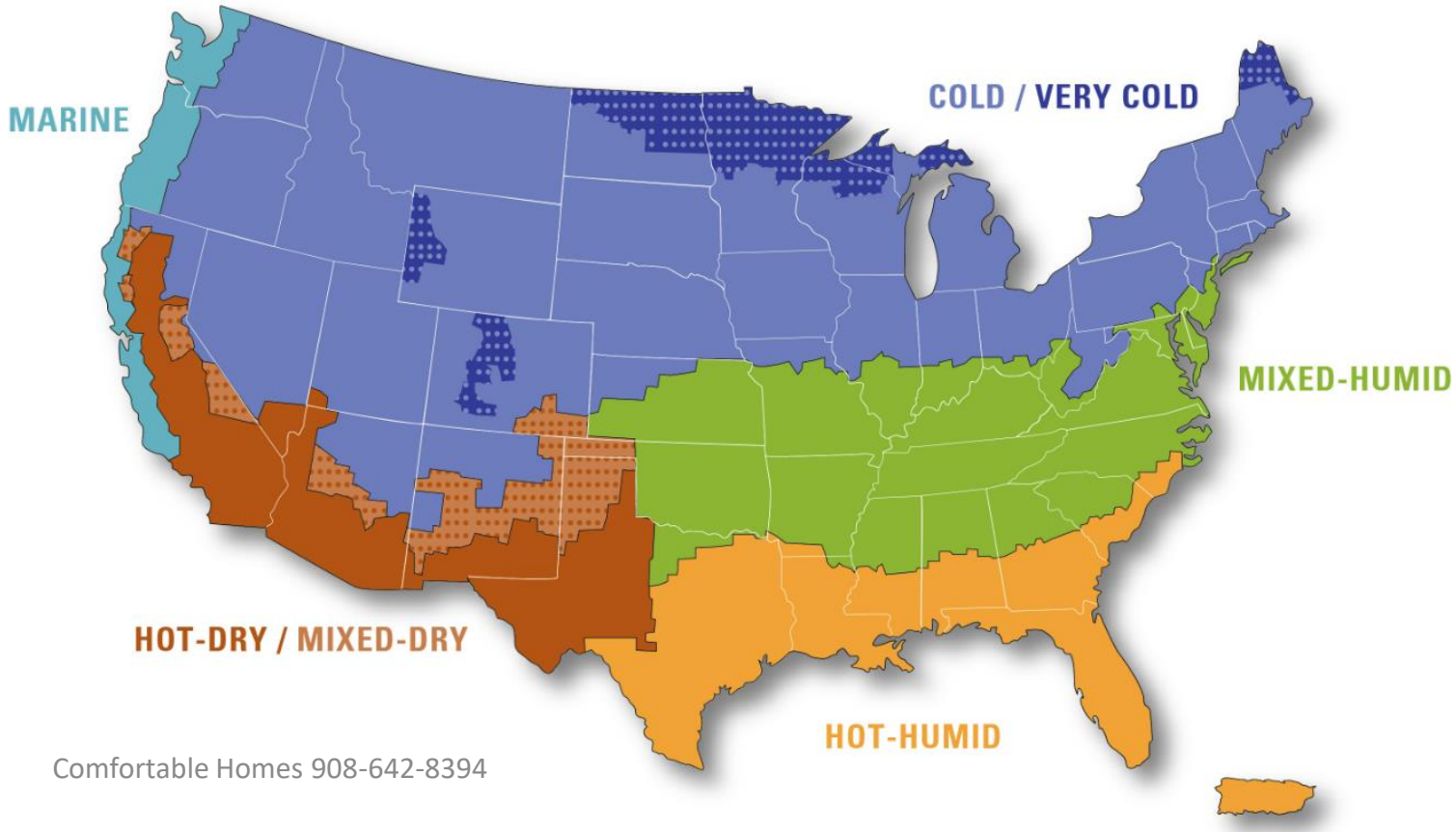
100,000 Btuh

Rule of Thumb!

Heating & Cooling:
30 Btu's per square foot

Homes built Before
Probably didn't get
a load calculation.

1986



Prior to 1986 HVAC Contractors used:

Rule of Thumb – sizing method.

COOLING

A rule of thumb, states each 12,000 BTU = should be enough to cool 400-500 square feet
BUT
With proper home sealing and insulation, = a unit could condition up to 1,000 square feet per 12,000 BTU.

HEATING

30 BTUs of heat for every square foot of living space you want to heat or cool.
A 2,000-square-foot home, this rule of thumb suggests you need a 60,000 BTU of heat.

Rule of thumb is just a wild guess based on square footage not actual load calculation.

ACCA MANUAL J LOAD CALCULATION

Rule of Thumb
Homes Built Before **1986**

Computerized Energy Model of your home to qualify you for incentives.

wrightsoft™

Training Certificate

Presented to

JIM PRICE

For successfully completing a training course for

Automated Software Design

Presented this 2nd *day* of *May, 2007*

Powered by ACCA MANUAL D

Powered by ACCA MANUAL J

Alex Meaney

Senior Trainer, Wrightsoft

95% of my Competitors DO NOT do a Load Calculation or a Building Analysis before recommending a System (Source: ACCA)

THEY WING IT!

And install the same thing they are taking out.

95%

Poor or NO Design
Poor Installation
Low Quality Product
Untrained Installers
Sellers tell you enough to make you buy.

What you Don’t Know will Hurt you!

Many of the original boilers and furnaces had efficiency levels as low as 50% with no minimum efficiency guidelines prior to 1992.

- 1985 – The founding of Wrightsoft a graphic interfaced load calculation software replacing the old excel spread sheet long version of load calculations.
- 1986 – Wrightsoft released the first version of Right-J for ACCA manual J load calculations.
- 1987 - The National Appliance Energy Conservation Act of 1987 established the first minimum efficiency requirements for central air-conditioning and heat pump equipment sold in the United States. These standards went into effect in 1992, and later updates went into effect in 2006 and 2015.
- 1990’s – The first 90+ efficient furnaces start arriving on the market.
- 2005 - the Energy Policy Act (EPAct 2005) set new standards for 16 products and directed DOE to set standards via rulemaking for another five.
- 2007 Congress passed the Energy Independence and Security Act (EISA 2007), enacting new or updated standards for 13 products including heating, cooling, water heating equipment.
- 2009 – The first International Energy Code was introduced for buildings.
- 2011 – NJ adopted the International Energy Code for new construction and later included retrofits.

Record of Completion

Presented this sixth day of September, 2007
this hereby certifies that

James W. Price

has successfully completed a course in

Solar and Radiant Heating

Executive Director: Johnny Weiss

SOLAR ENERGY INTERNATIONAL (SEI)
Renewable Energy Education for a Sustainable Future
PO Box 715, Carbondale, CO 81623 • 970.963.8855 • www.solarenergy.org

Certificate of Completion

Presented this eighth day of September, 2007
this hereby certifies that

James W. Price

has successfully completed a course in

SOLAR & RADIANT HEATING

Peter Biondo

Instructor: Peter Biondo

SOLAR ENERGY INTERNATIONAL (SEI)
Renewable Energy Education for a Sustainable Future
PO Box 715, Carbondale, CO 81623 • 970.963.8855 • www.solarenergy.org

TheNAHB University of Housing
REACH HIGHER. WORK SMARTER.

This is to certify that

James Price

has successfully completed the
National Association of Home Builders'

Green Building for Building Professionals Course

on

September 4-5, 2008

This certificate is evidence of a continued commitment to excellence and professionalism in the building industry.

A Service of
NAHB
National Association of Home Builders

EST. 1988 CERTIFIED GRADUATE REMODELER CGR NAHB REMODELING EXCELLENCE

NAHB NATIONAL GREEN BUILDING PROGRAM™

CERTIFIED GRADUATE BUILDER GB

Bob Peterson, CGR, CAPS
Chair, CGR Board of Governors

T.W. Bailey, Sr., CGP
Chair, CGP Working Group

Daimon Doyle, CAPS, GMB
Chair, CGB Board of Governors

SOMERSET COUNTY
TECHNOLOGY INSTITUTE
P.O. Box 6350 • North Bridge Street & Vogt Drive
Bridgewater, NJ 08807
(908) 526-8900, ext. 7268 • www.scti.org

GRADE REPORT

Page: 1

JAMES PRICE
1247 MOUNT HOREB ROAD
PO BOX 211
MARTINSVILLE, NJ 08807

Student ID : 000000935
Soc Sec No. : [redacted]
Date Printed: 01/04/08

Start Date : 09/07/00
Withdrew :
Re-Entered : 09/05/07

Program: UNDECLARED

Term: A73 FALL 2007	Attempted			Earned	
	Credits	Hours	Grade	Credits	Hours
ARTC202+ HEATING SYSTEMS DESIGN	6.00	0.00	B+	6.00	.00
Term Totals: GPA 3.50	6.00	0.00		6.00	.00

SOMERSET COUNTY
TECHNOLOGY INSTITUTE
P.O. Box 6350 • North Bridge Street & Vogt Drive
Bridgewater, NJ 08807
(908) 526-8900, ext. 7268 • www.scti.org

GRADE REPORT

Page: 1

JAMES PRICE
1247 MOUNT HOREB ROAD
PO BOX 211
MARTINSVILLE, NJ 08807

Student ID : 000000935
Soc Sec No. : [redacted]
Date Printed: 05/21/08

Start Date : 09/07/00
Withdrew :
Re-Entered : 09/05/07

Program: UNDECLARED

Term: A81 SPRING 2008	Attempted			Earned	
	Credits	Hours	Grade	Credits	Hours
ARTC102+ AIR CONDITIONING SYS. DESIGN	6.00	0.00	A	6.00	.00
Term Totals: GPA 4.00	6.00	0.00		6.00	.00

2007 Mitsubishi mini split Cold Climate Heat Pumps arrive in USA. Limited application.

2009 – ARRA American Recovery and Reinvestment Act injected money for consumers for HPwES.
2010 – ARRA money continued to explode the green energy programs. Business exploded.
2011 – ARRA money stopped and homeowners stopped all work because no one could get a loan.
2012 – We laid off most staff and went back down to a small HVAC company.

Obama signed American Recovery and Reinvestment Act

Insulation is Sexy!

CALEFFI SOLAR

Authorized Independent Contractor

This certificate is presented to

James Price, Freedom Solar Energy

For successfully completing all required coursework and training

Caleffi Solar Thermal Water Heating

Training Course #101.08

Mark Olson

Mark Olson, GM-CEO

Roger Corrente

Caleffi Authorized Trainer (ID): Roger Corrente-1988

Completed:	The 5th of February 2009
Authorization #:	0209-3158
Authorization Type:	Caleffi Solar Contractor
Expiration Date:	December 31, 2012

Rinnai®

This certifies that

James Price

has satisfactorily completed a course in

Level III Service Fundamentals

consisting of 8 contact hours,
this 11th day of February, 2009.

Joseph Bureau

Instructor

Rinnai

This certifies that

James W. Price

Has satisfactorily completed a course in

BOILER INSTALLATION TRAINING

Consisting of 8 contact hours,

This 28th day of October 2009

Joseph Bureau

Joe Bureau

Certificate of Excellence

is awarded to

James W. Price

who has successfully completed a comprehensive evaluation and is certified as a

Air Conditioning & Heat Pump Professional

as of December 16, 2009

Expires: 12/16/2012

Larry Zarker
Chief Executive Officer

Mathew Anderson
Manager of Certifications

BUILDING PERFORMANCE INSTITUTE, INC.

ACI

Affordable Comfort, Inc.

CERTIFICATE OF COMPLETION

Presented to:

JAMES PRICE

At

ACI Home Energy Trainer Conference 2011

November 1-2, 2011 • Charlotte, NC

Amy Fazio
Executive Director, ACI

FUJITSU GENERAL AMERICA, INC.

CERTIFIES THAT

JIM PRICE

has successfully completed the required course of study and is therefore awarded this certificate of completion which included 1 hours of HVAC training.

HALCYON HFI TECHNICIAN BASIC TRAINING

Given on this day 05/06/2012

Fujitsu National Trainer
NATE Proctor ID: 101-21-6325

A final passing grade of 90% was achieved

Halcyon

FUJITSU

HAL-TECH
Fujitsu Online Training

CERTIFICATE OF ATTENDANCE

THIS IS TO CONFIRM THAT

James W. Price

HAS COMPLETED THE SEMINAR ENTITLED

ACCA Manual S
Course 5077-0020
September 17, 2012

EHCC – Mt. Laurel, NJ

Eastern Heating & Cooling Council

BUILDING PERFORMANCE INSTITUTE INC. BPI ™

RECOGNIZED TRAINING

Signature

September 21, 2012

NORTH AMERICAN TECHNICIAN EXCELLENCE NATE RECOGNIZED

NATE-Recognized TRAINING

EnerWorks

EnerWorks Certified Dealer / Installer

This is to certify that

Jim Price

has successfully completed the EnerWorks Installation Training and is qualified to install the EnerWorks Residential Solar Hot Water Appliance

12-05-15-023	Paul Owen	May 15, 2012
Certificate No.	Trainer	Date

Comfortable Homes 908-642-8394

5242

TriangleTube

Training Certificate

This is to certify that

Jim Price

Freedom Solar Energy LLC

Has successfully completed the Triangle Tube Installation Training Session on the Prestige & Challenger Condensing Boiler.

Instructor

June 5, 2013

Date

President
Triangle Tube/Phase III Inc.

Cold Climate Heat Pumps introduced to the United States

MITSUBISHI ELECTRIC
HEATING & AIR CONDITIONING

2001	Manufactured Cold Climate HP
2007	Shipped Cold Climate HP USA
2018	Shipped ducted Air Handler USA
2022	Introduced Intelli-heat HP

FUJITSU

2018	Manufactured Cold Climate HP
2020	Marketing Cold Climate HP USA

2018 Denise Buys her first Tesla Model 3

2018 Mitsubishi cold climate heat pump air handler for ducted systems arrives in U.S.A.

MITSUBISHI ELECTRIC
COOLING & HEATING

Certificate of Completion

This certificate is awarded to:

Jim Price

for successfully completing

M- and P-Series Service Essentials – 4-hour

Mitsubishi Electric Trane HVAC US is authorized by IACET to offer 0.40 CEUs for this course.

Training completed on October 2, 2019

ACCREDITED IACET PROVIDER

Comfortable Homes 908-642-8394

MITSUBISHI ELECTRIC
COOLING & HEATING

Certificate of Completion

This certificate is awarded to:

Jim Price

for successfully completing

M- and P-Series Installation & Service Essentials

Mitsubishi Electric Trane HVAC US is authorized by IACET to offer 1.40 CEUs for this course.

Training completed on October 18, 2019

ACCREDITED IACET PROVIDER

Comfortable Homes 908-642-8394

MITSUBISHI ELECTRIC
COOLING & HEATING

Certificate of Completion

This certificate is awarded to:

Jim Price

for successfully completing

Residential Applications (4-hour)

Mitsubishi Electric Trane HVAC US is authorized by IACET to offer 0.40 CEUs for this course.

Training completed on November 9, 2021

ACCREDITED IACET PROVIDER

Comfortable Homes 908-642-8394

REWIRING AMERICA

founded 2020

Developing a Plan for Action

ELECTRIC COACHES
A COURSE THAT SPARKS
REWIRING AMERICA

Comfortable Homes 908-642-8394

Mr. Heat Pump

Department of Energy launched residential cold climate heat pump challenge 2021-2024!

Mitsubishi

Fujitsu

2022 – Federal Inflation Reduction Act passed promising of huge incentives to replace off fossil fuel.
2025 – NJ finally comes out with the decarbonization program promised; releasing funding late Q3.
2025 – 4th Quarter we are scrambling to get decarbonization work done before December 31, 2025.
2026 – NJ decarbonization program still in effect for 2026; no federal tax credit.

ACT OF 2022

INFLATION REDUCTION

UNITED STATES OF AMERICA

GAME ON!

25C ENERGY-EFFICIENT TAX CREDIT

COVERS 30% OF COST FOR QUALIFYING ENERGY EFFICIENCY UPGRADES

$3200 Total Annual Credit	$2000 Total Annual Credit	$1200 Total Annual Credit
$2000 Heat Pumps, Heat Pump Water Heaters, Biomass Stoves/ Boilers	Heat Pumps	Building Envelope (Windows, Doors, Insulation, Air Sealing)
$1200 Other Upgrades	Heat Pump Water Heaters	Home Energy Audit
	Biomass Stoves/Boilers	Electrical Panel

Will this work in my house?

YES!

But It’s Not Easy!

Highly Specialized, high Level of Training to make the transition from fossil fuel to Heat Pumps.

1. Heat pumps operate at a lower temperature than gas furnaces.
2. Therefore, heat pumps require more air at a lower temperature and larger ducts to deliver enough heat to replace the heat being lost through the walls and ceiling of the home.
3. An alternative to replacing the ducts would be to lower the heating and cooling load by sealing, and insulating. Smaller load requires small equipment which will function very well with existing ductwork. If you are going to spend more money to accommodate the heat pump you may as well spend the money to reduce the load and the energy bills rather than just changing ductwork and spending the money to replace the heat being lost. This is the reason you want to take a whole home approach instead of just the HVAC replacement approach.

4. I have homes I have removed oil at a cost of $2,000 per year. After air sealing, insulating and installing a cold climate heat pump their homes became warmer and more comfortable than before while there heating bills for the year were reduced below $500 per year. HOME RUN!

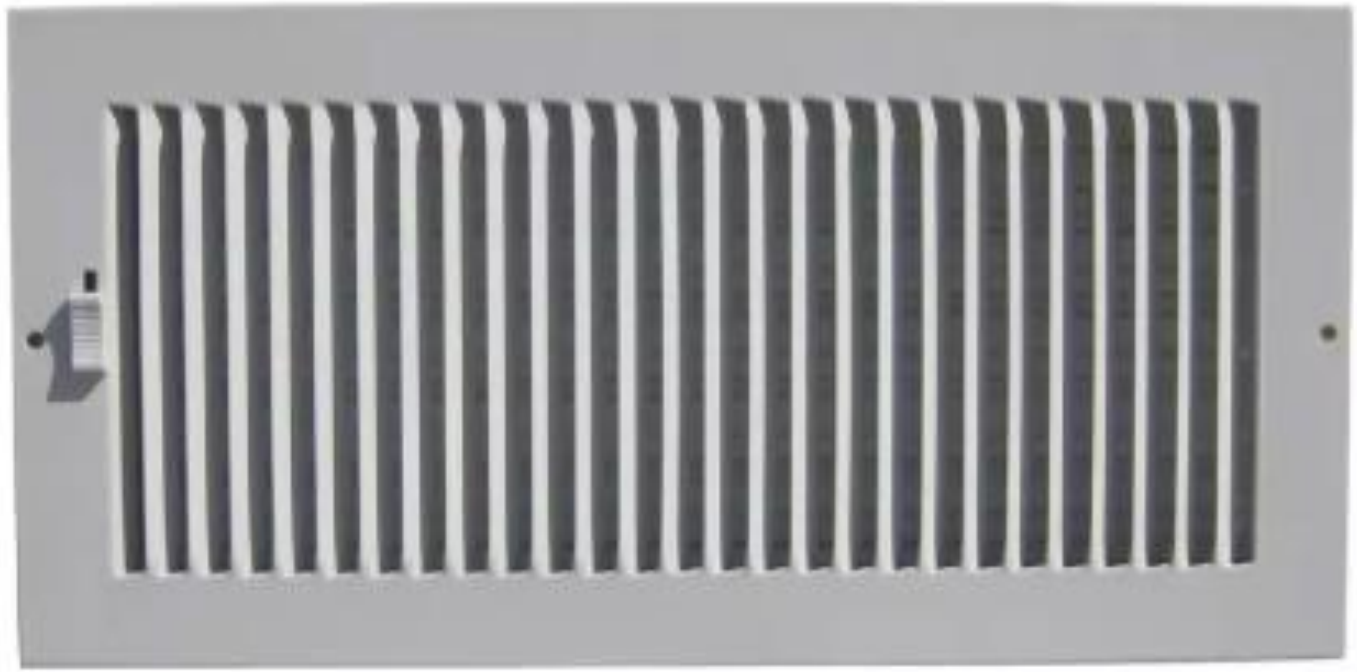
Always Select the Highest Quality!

Never the Cheapest Price!

Performance of Equipment versus Cost

Hart and Cooley High Performance $60
14 feet of through from ceiling to floor.

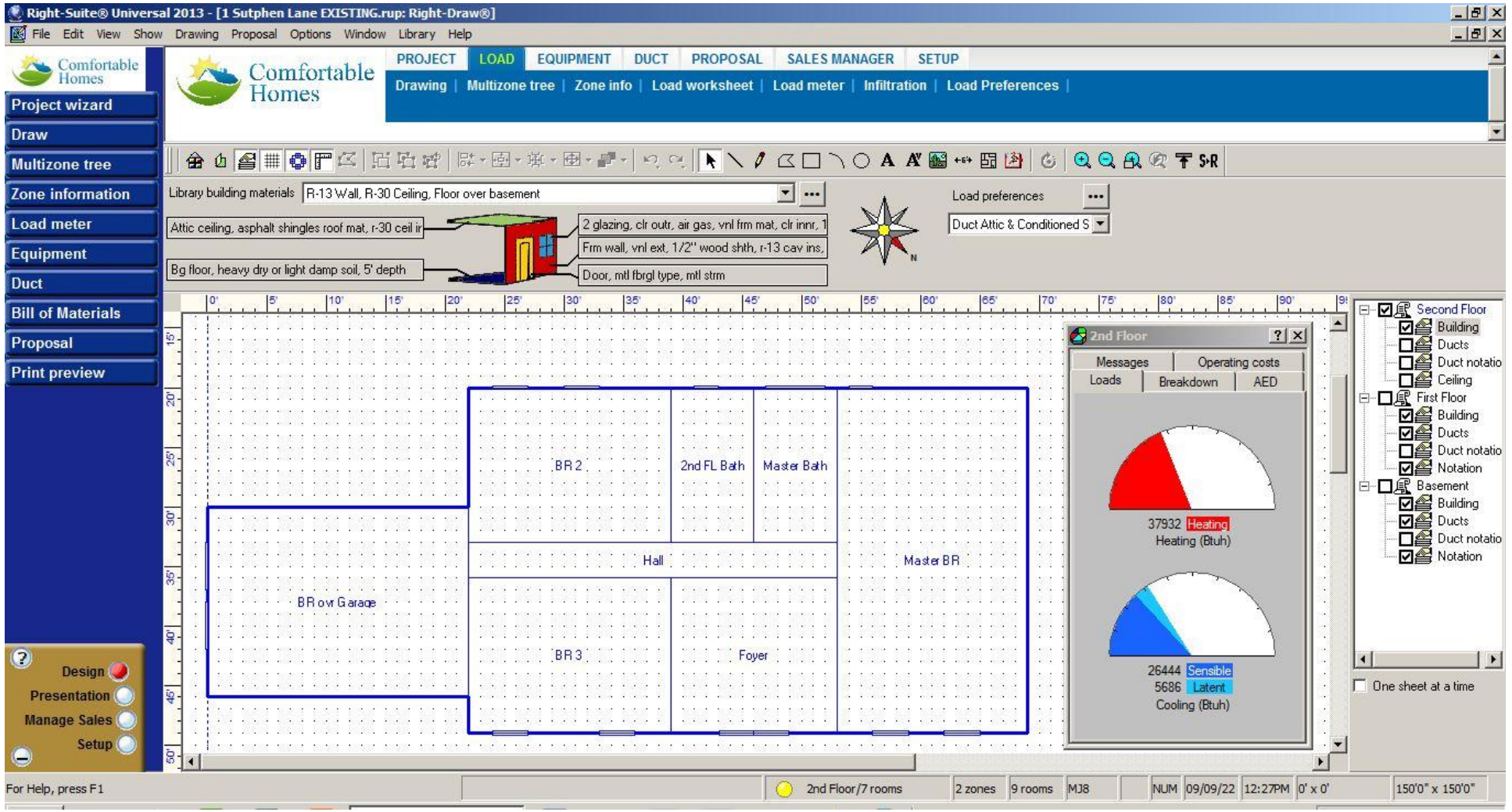
Lowest Cost Wall Register Lowest Performance $4
No through from ceiling to floor.



What’s the Plan?


Find out your baseline.
ENERGY
AUDIT

Heat Load Calculation



Takes a contractor about 6-8 hours of work, time & payroll.

Cost between $1,000 and $1,800.

System Sizing is based on the coldest day of the year.

Temperature Changes

October 50-65 F

November 40-55 F

December 30-50 F

January 10-30 F

February 10-30 F

March 30-50 F

April 40-65 F

Weatherize the House

Heating System Replaces Btu's Lost

Comfortable Homes

Building Analysis
Entire House
Comfortable Energy Efficient Homes

Job: 040114
Date: Apr 05, 2014
By: Jim Price

P.O. Box 211, Martinsville, NJ 08836

Current Conditions

Project Information

For: XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX

Design Conditions

Location:
New Brunswick, NJ, US
Elevation: 86 ft
Latitude: 40°N

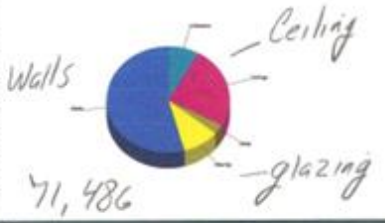
Outdoor:	Heating	Cooling
Dry bulb (°F)	10	89
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	60	14
Relative humidity (%)	50	50
Moisture difference (gr/lb)	47.5	32.1

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

Heating

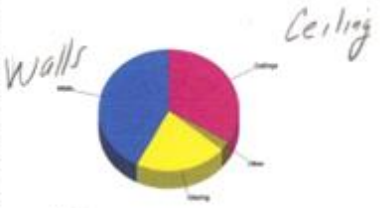
Component	Btuh/ft²	Btuh	% of load
Walls	15.3	38746	54.2
Glazing	34.2	7001	9.8
Doors	20.1	844	1.2
Ceilings	15.6	17699	24.8
Floors	1.3	1357	1.9
Infiltration	3.2	5838	8.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**71486**	**100.0**



71,486

Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	7.0	17674	42.4
Glazing	43.3	8877	21.3
Doors	8.7	366	0.9
Ceilings	12.4	14077	33.8
Floors	0	0	0
Infiltration	0.4	698	1.7
Ducts		0	0
Ventilation		0	0
Internal gains		0	0
Blower		0	0
Adjustments		0	
Total		**41691**	**100.0**



Latent Cooling Load = 989 Btuh
Overall U-value = 0.206 Btuh/ft²·°F

42,680

ERROR: negative wall area in Master Bedroom - check windows.

wrightsoft Right-Suite® Universal 2013 13.0.01 RSU09520

2014-Apr-05 21:12:00
Page 1

Comfortable Homes

Building Analysis
Entire House
Comfortable Energy Efficient Homes

Job: 040114
Date: Apr 05, 2014
By: Jim Price

P.O. Box 211, Martinsville, NJ 08836

Attic + Exterior Walls + Basement Walls

Project Information

For: XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX

Design Conditions

Location:
New Brunswick, NJ, US
Elevation: 86 ft
Latitude: 40°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	10	89
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	60	14
Relative humidity (%)	50	50
Moisture difference (gr/lb)	47.5	32.1

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

Heating

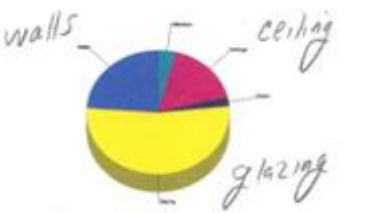
Component	Btuh/ft²	Btuh	% of load
Walls	5.3	13405	41.2
Glazing	34.2	7001	21.5
Doors	20.1	844	2.6
Ceilings	3.6	4127	12.7
Floors	1.3	1357	4.2
Infiltration	3.2	5838	17.9
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**32573**	**100.0**

32,573

54% Savings

Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.6	3989	23.7
Glazing	43.3	8877	52.8
Doors	8.7	366	2.2
Ceilings	2.5	2880	17.1
Floors	0	0	0
Infiltration	0.4	698	4.2
Ducts		0	0
Ventilation		0	0
Internal gains		0	0
Blower		0	0
Adjustments		0	
Total		**16810**	**100.0**



Latent Cooling Load = 989 Btuh
Overall U-value = 0.090 Btuh/ft²·°F

17,799

ERROR: negative wall area in Master Bedroom - check windows.

59% Savings

wrightsoft Right-Suite® Universal 2013 13.0.01 RSU09520

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Page 1

Specify Cold Climate Heat Pump on the list of 25 C Tax Credit List of Eligible Products or Don't buy it!

Mitsubishi 454B 2025 Tax Credit Qualified Units 4-14-24

Available Locally	Energy Star Partner	Most Efficient	Tax Credit	AHRI #	Series Name	ICM Outdoor Unit Manufacturer	Outdoor Unit Brand	Outdoor Model #	Indoor Brand	Indoor Model #	Furnace	Type	Cold Climate	Meets Peak Cooling Requirements	SEER2	EER2	HSPF2	Cooling Capacity	Heating Capacity 47F	Heating Capacity 17	Heating Capacity 5	COP @ 5F	Control Verification Proceedure	Compressor Staging	Refrigerant	Connected Capable	Date Available
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA09	Mitsubish	MFZ-KX09NL***		HP - Mini	Yes	Yes	17	12.5	10	9,000	12,000	7,300	12,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA09	Mitsubish	MLZ-KX09NL***		HP - Mini	Yes	Yes	16.7	12.3	9.7	9,000	11,400	7,000	11,400	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA09	Mitsubish	MSZ-EX09NLB***		HP - Mini	Yes	Yes	17.4	12.6	10	9,000	12,000	7,300	12,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA09	Mitsubish	MSZ-EX09NLS***		HP - Mini	Yes	Yes	17.4	12.6	10	9,000	12,000	7,300	12,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA09	Mitsubish	MSZ-EX09NLW***		HP - Mini	Yes	Yes	17.4	12.6	10	9,000	12,000	7,300	12,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA09	Mitsubish	SLZ-AF09NL***		HP - Mini	Yes	Yes	16.6	12.5	9.3	9,000	12,000	7,500	12,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	MFZ-KX12NL***		HP - Mini	Yes	Yes	17.2	13.9	10	12,000	15,000	9,300	15,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	MLZ-KX12NL***		HP - Mini	Yes	Yes	16.7	13.3	9.6	12,000	15,000	9,500	15,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	MSZ-EX12NLB***		HP - Mini	Yes	Yes	17.6	14.1	10	12,000	15,000	9,400	15,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	MSZ-EX12NLS***		HP - Mini	Yes	Yes	17.6	14.1	10	12,000	15,000	9,400	15,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	MSZ-EX12NLW***		HP - Mini	Yes	Yes	17.6	14.1	10	12,000	15,000	9,400	15,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	PEAD-AA12NL***		HP - Mini	Yes	Yes	17	13.6	9.5	12,000	15,000	9,300	15,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	SLZ-AF12NL***		HP - Mini	Yes	Yes	16.8	13.9	9.4	12,000	15,000	9,600	15,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA12	Mitsubish	SVZ-AP12NL***		HP - Mini	Yes	Yes	16.1	12.6	9.3	12,000	15,000	9,300	15,000	2.1	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA15	Mitsubish	MFZ-KX15NL***		HP - Mini	Yes	Yes	17.3	12.8	10	15,000	17,000	10,900	17,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA15	Mitsubish	MSZ-EX15NLB***		HP - Mini	Yes	Yes	17.5	11.9	9.8	15,000	17,000	10,900	17,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA15	Mitsubish	MSZ-EX15NLS***		HP - Mini	Yes	Yes	17.5	11.9	9.8	15,000	17,000	10,900	17,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA15	Mitsubish	MSZ-EX15NLW***		HP - Mini	Yes	Yes	17.5	11.9	9.8	15,000	17,000	10,900	17,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA15	Mitsubish	PEAD-AA15NL***		HP - Mini	Yes	Yes	17.2	13	10.2	15,000	18,000	11,600	18,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA15	Mitsubish	SLZ-AF15NL***		HP - Mini	Yes	Yes	17	12.7	9.2	15,000	17,000	11,000	17,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	MFZ-KX18NL***		HP - Mini	Yes	Yes	17.2	12.4	9.9	18,000	20,000	13,400	20,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	MLZ-KX18NL***		HP - Mini	Yes	Yes	17.2	11.7	9.5	16,400	18,400	12,000	18,400	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	MSZ-EX18NLB***		HP - Mini	Yes	Yes	17.5	11.7	10.2	16,400	20,000	13,100	20,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	MSZ-EX18NLS***		HP - Mini	Yes	Yes	17.5	11.7	10.2	16,400	20,000	13,100	20,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	MSZ-EX18NLW***		HP - Mini	Yes	Yes	17.5	11.7	10.2	16,400	20,000	13,100	20,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	PEAD-AA18NL***		HP - Mini	Yes	Yes	17.3	12.7	10	18,000	20,000	13,100	20,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	SLZ-AF18NL***		HP - Mini	Yes	Yes	17.5	12	9.3	18,000	20,000	13,200	20,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AA18	Mitsubish	SVZ-AP18NL***		HP - Mini	Yes	Yes	16.2	12	9.5	18,000	20,000	12,800	20,000	2	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AK24	Mitsubish	PEAD-AA24NL***		HP - Mini	Yes	Yes	17.3	12.3	8.5	24,000	28,000	17,000	25,000	1.8	ENERGY S	Continuou	R-454B (G	No	########
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AK24	Mitsubish	SVZ-AP24NL***		HP - Mini	Yes	Yes	18.6	11.7	8.6	23,800	28,000	19,000	23,000	1.8	ENERGY S	Continuou	R-454B (G	No	########
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AK30	Mitsubish	PEAD-AA30NL***		HP - Mini	Yes	Yes	19.5	12.3	8.5	30,000	34,000	21,800	32,000	1.8	ENERGY S	Continuou	R-454B (G	No	########
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AK30	Mitsubish	SVZ-AP30NL***		HP - Mini	Yes	Yes	17.1	13	9.2	28,000	34,000	23,600	32,000	1.8	ENERGY S	Continuou	R-454B (G	No	########
	Mitsubish	Yes	Yes	2.16E+08	Mitsubishi	Electric	Mitsubish	SUZ-AK36	Mitsubish	PEAD-AA36NL***		HP - Mini	Yes	Yes	19.5	12.3	8.5	36,000	40,000	24,400	38,000	1.8	ENERGY S	Continuou	R-454B (G	No	########
	Mitsubish	Yes	Yes	2.17E+08	M series		Mitsubish	SUZ-CA09	Mitsubish	MFZ-KX09NL***		HP - Mini	No	Yes	21.8	12.6	12	9,000	12,000	7,700	6,200	2.6	ENERGY S	Continuou	R-454B (G	No	2/3/2025
	Mitsubish	Yes	Yes	2.17E+08	M series		Mitsubish	SUZ-CA09	Mitsubish	MLZ-KX09NL***		HP - Mini	No	Yes	20.9	11.8	11.9	9,000	12,000	7,800	6,300	2.5	ENERGY S	Continuou	R-454B (G	No	2/3/2025


MITSUBISHI ELECTRIC
COOLING & HEATING

Certificate of Completion

This certificate is awarded to:

Jim Price

for successfully completing

M- and P-Series Installation & Service Essentials

Mitsubishi Electric Trane HVAC US is authorized by IACET to offer 1.40 CEUs for this course.

Training completed on October 18, 2019

ACCREDITED IACET PROVIDER

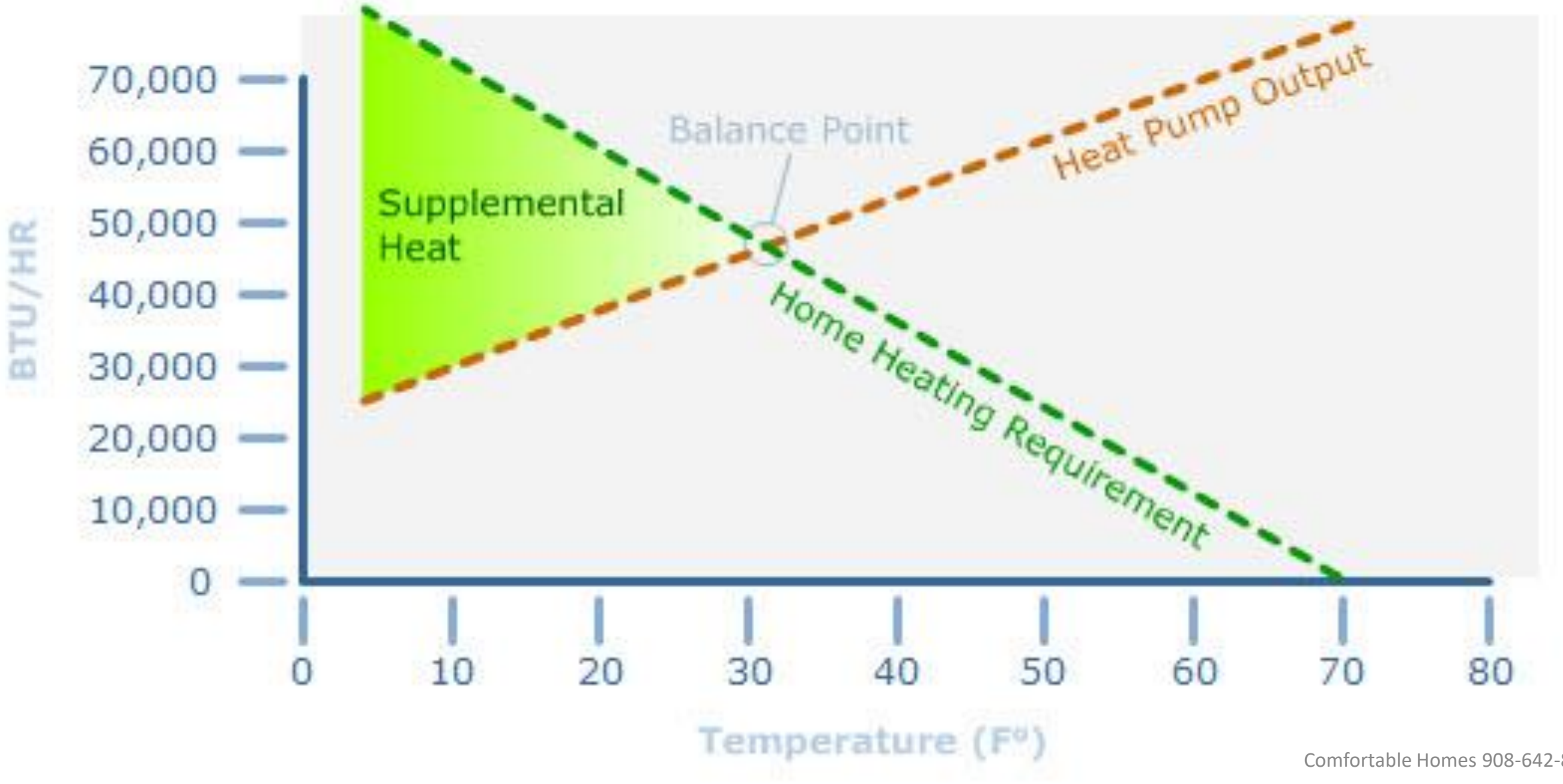
Oil Average Energy savings: 54%.

The Cold Climate Heat Pump Installer is More Important than the Cost

Obstacles to Overcome

1. Heating and Cooling Load Balancing.
2. Duct Sizing.
3. Maximum Equipment Sizing for the home.
4. Finding Qualified Companies who understand how to design and install the systems. THESE ARE RARE!

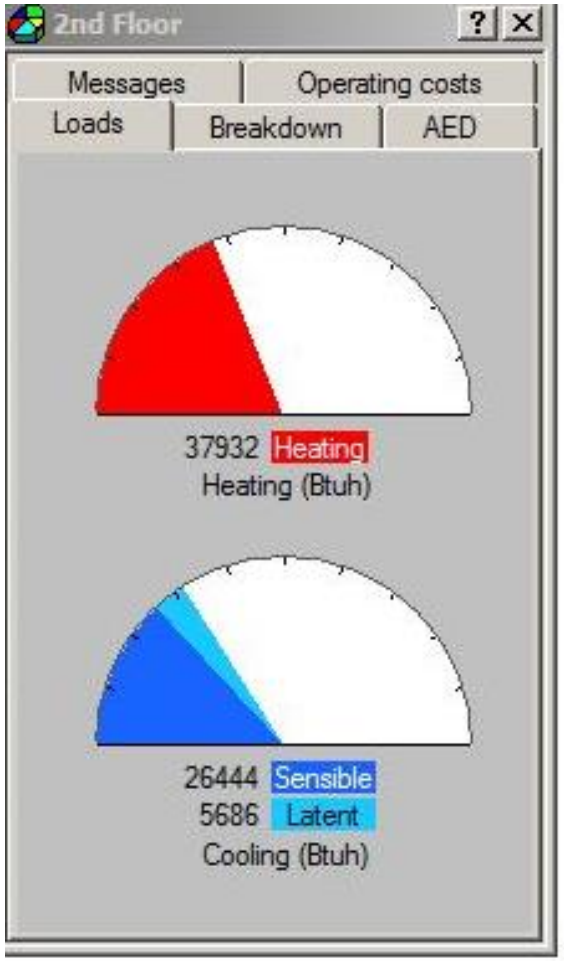
Heat Pump Balance Point



Proper Duct Sizing

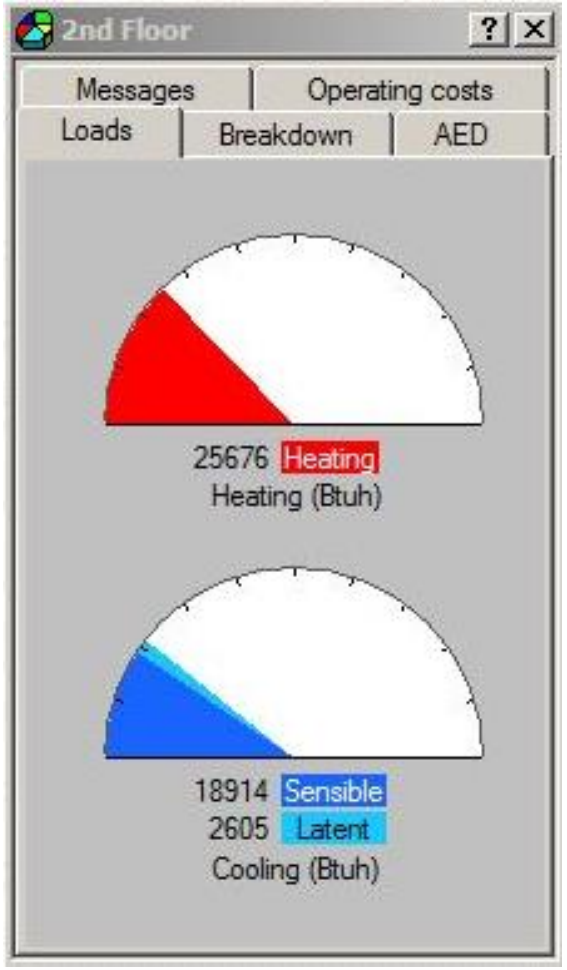
Heat Pumps Require Larger Ducts than a Furnace

Sealed Ducts & Attic Insulation



32% Lower Heating Requirement

33% Lower Cooling Requirement



The # 1 Reason People Take Action

IMMEDIATE CRISIS

NO Air Conditioning!

Panic Buying!

How Much Does This Cost?

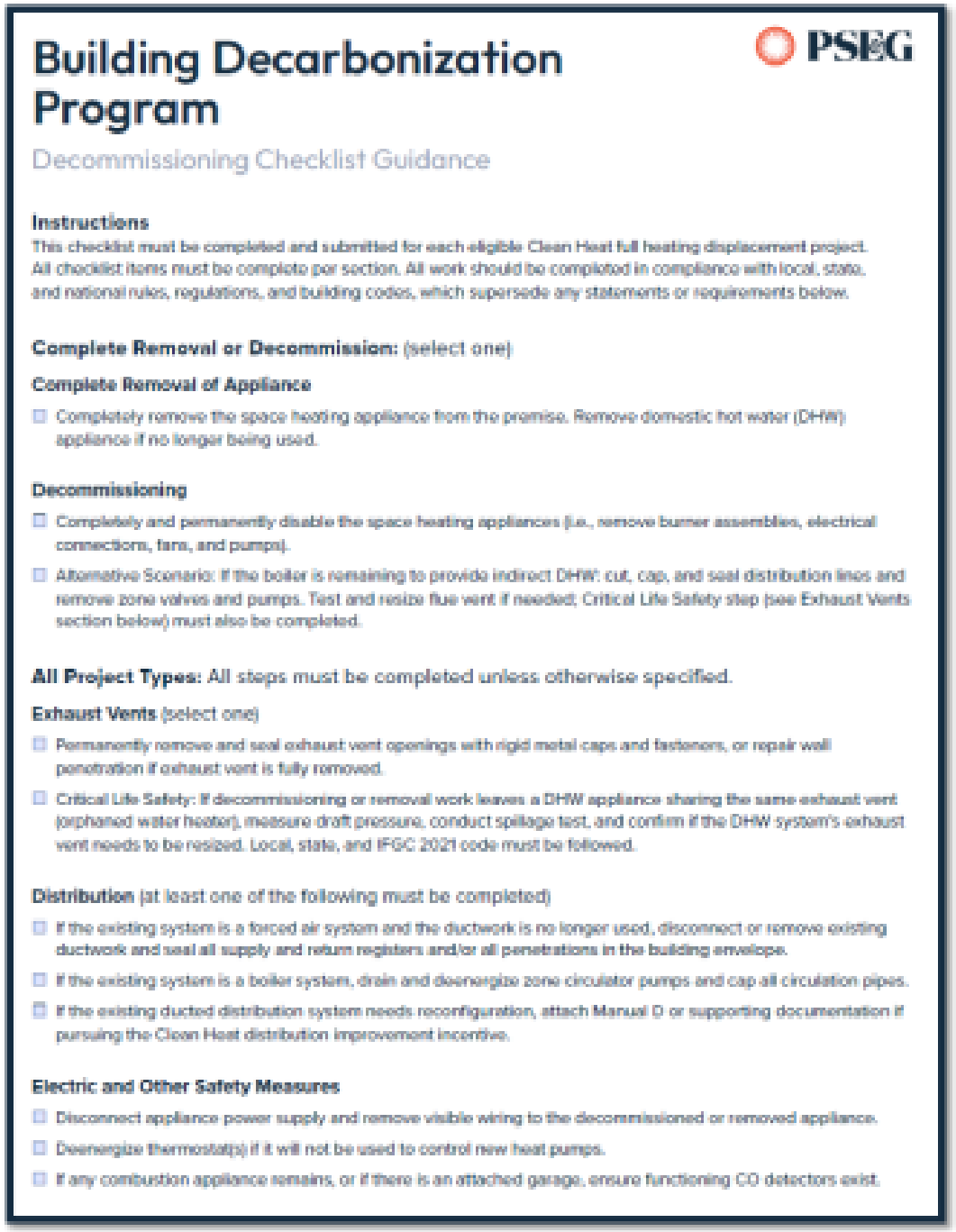
“Clean Heat”

Remove or disable your old fossil fueled heating system and replace it with a cold climate Air-Source Heat Pump.

Equipment Type	Minimum Efficiency Requirements	Sizing & Additional Requirements	Total Incentive
Cold Climate Air Source Heat Pump (ccASHP)	Must be on the NEEP equipment list or meet current NEEP specification at the time of installation: • Ductless ccASHP – SEER2 > 15, HSPF2 > 8.5, COP 5F > 1.75 • Ducted ccASHP – SEER2 > 14.3, HSPF2 > 7.7, COP 5F > 1.75	• Total combined equipment capacity of the ccASHPs must be sized to meet a minimum of 100% of the Manual J Heat Load. • Manual S must be submitted and associated heating capacity limits not exceeded. • Decommissioning of existing heating system is required.	**Gas or Delivered Fuel Customers:** • Lesser of $10,000 or 50% of project cost of the largest system. **Low to Moderate Income Customers:** • Lesser of $12,000 or 60% of project cost of the largest system. **Incremental Adders:** • Up to $2,000 for decommissioning (Decommissioning Checklist required) • Up to $2,000 for re-ducting (if specified by Manual D) • Additional $2,000 per ccASHP unit (incremental smaller/equally sized systems).

On Bill Repayment Financing Cap $50,000

- **Decommissioning Checklist** is needed **only** if you are claiming the **"Clean Heat ccASHP"** incentive or the **"Ground Source Heat Pump"** incentive
- Form must be filled out entirely and uploaded with your supporting documents via the portal.



Building Decarbonization Program

PSEG

Decommissioning Checklist Guidance

Instructions

This checklist must be completed and submitted for each eligible Clean Heat full heating displacement project. All checklist items must be complete per section. All work should be completed in compliance with local, state, and national rules, regulations, and building codes, which supersede any statements or requirements below.

Complete Removal or Decommission: (select one)

Complete Removal of Appliance

- ☐ Completely remove the space heating appliance from the premise. Remove domestic hot water (DHW) appliance if no longer being used.

Decommissioning

- ☐ Completely and permanently disable the space heating appliances (i.e., remove burner assemblies, electrical connections, fans, and pumps).
- ☐ Alternative Scenario: If the boiler is remaining to provide indirect DHW: cut, cap, and seal distribution lines and remove zone valves and pumps. Test and resize flue vent if needed; Critical Life Safety step (see Exhaust Vents section below) must also be completed.

All Project Types: All steps must be completed unless otherwise specified.

Exhaust Vents (select one)

- ☐ Permanently remove and seal exhaust vent openings with rigid metal caps and fasteners, or repair wall penetration if exhaust vent is fully removed.
- ☐ Critical Life Safety: If decommissioning or removal work leaves a DHW appliance sharing the same exhaust vent (orphaned water heater), measure draft pressure, conduct spillage test, and confirm if the DHW system's exhaust vent needs to be resized. Local, state, and IFGC 2021 code must be followed.

Distribution (at least one of the following must be completed)

- ☐ If the existing system is a forced air system and the ductwork is no longer used, disconnect or remove existing ductwork and seal all supply and return registers and/or all penetrations in the building envelope.
- ☐ If the existing system is a boiler system, drain and deenergize zone circulator pumps and cap all circulation pipes.
- ☐ If the existing ducted distribution system needs reconfiguration, attach Manual D or supporting documentation if pursuing the Clean Heat distribution improvement incentive.

Electric and Other Safety Measures

- ☐ Disconnect appliance power supply and remove visible wiring to the decommissioned or removed appliance.
- ☐ Deenergize thermostat(s) if it will not be used to control new heat pumps.
- ☐ If any combustion appliance remains, or if there is an attached garage, ensure functioning CO detectors exist.

On Bill Repayment (OBR)

Terms & Amounts

- Requires at least one active PSE&G electric account with OBR pre-approval
- **Up to $50,000 in OBR available for BD projects**

Benefits

- No fees charged to customers or contractors
- May reduce upfront costs for customers
- Encourages customers to collaborate with a PSE&G trade ally
- Customers can repay with 0% interest over a period of up to 7 years
  - LMI customers with OBR balances between $10,001 and $50,000 have repayment terms of 7 or 10 years

Payments

- OBR payments are made directly to contractors
- Customers will see monthly payments reflected on their PSE&G bill within 3-6 months after contractor payment has been made.

Required Documents for Building Decarbonization Rebate Application	
* Customer Invoice noting itemized line item with PSE&G BD incentives and any incentive adders	*AHRI Certificate for all eligible equipment
* Incentive Claim Form – signed & dated by PSE&G account holder	OBR Form – signed by PSE&G account holder (for financing customers) Proof of customer's OBR eligibility will be needed as well
* Photographic evidence of baseline equipment	LMI Form – signed (for LMI customers)
* Manual J/S/D – As needed, based on project type	Decommissioning Checklist – Clean Heat Projects Only

MORE MONEY

Whole Home Option

Up to **$7,500** with 33% energy savings modeled.
This can be combined with decarbonization rebates.
This is a Custom measure based on the specific needs of the home.
Rebates are determined by energy savings for the work to be performed.
This requires testing in and testing out to determine a homes condition before and after.

Can Include:
Home Air Sealing
Home Insulation
Duct Sealing
Duct Insulation
Water Heater replacement
Heating and Cooling system replacement

8-30-2025 Denise Buys her second Tesla Model 3

September 20, 2025 I purchase a Vinfast VF8

Top 10 Reasons: Convert From Fossil Fuel to Electric?

1. It's Cheaper to operate verses fossil fuel appliance's.
2. Federal tax incentives, state financial incentives and local 0% financing make replacement more affordable.
3. Electric price stability not affected by foreign fossil fuel prices.
4. Your building is safer:
a. No risk of carbon monoxide poisoning.
b. No risk dangerous flue gases to harm your family.
c. No risk of fossil fuel leaks resulting in health issues or fires.
5. Cleaner Air: Zero onsite combustion pollution or toxic byproducts. Cleaner onsite operation.
6. Zero onsite Carbon Emission's. Does not contribute additional carbon to the atmosphere
7. Zero onsite Greenhouse Gas Emission's. Meets clean air standards.
8. Zero onsite contribution to global warming. No heat going up a chimney.
9. Reverses Global Warming by removing heat from the air.
10. Satisfaction of knowing you are leaving the planet better than you found it.

AFTER TODAY 10-16-25 ANYONE WHO TELLS YOU THAT YOU CAN'T HEAT A 3,000 SQUARE FOOT HOUSE BUILT AFTER 1980 WITH A SINGLE COLD CLIMATE HEAT PUMP:

IS LYING TO YOU!

THEY JUST DON'T HAVE THE KNOWLEDGE HOW TO DO THE JOB AND DON'T WANT TO LEARN!

Questions?


Comfortable Homes.com
908-642-8394
Jim Price
Air Conditioning - Heating - Hot Water - Insulation
789 U.S. Route 202
Bridgewater, NJ 08807
Jim@comfortablehomes.com