



**ELECTRIFY**  
**MY HOME**

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# What if Your Next Furnace Wasn't a Furnace at All?

## Design heat pumps the right way!

Electrify My Home focuses on designing & installing *smart, safe, healthy, comfortable and efficient electric heat pump systems.*

In this presentation, you'll discover:

- 🔌 Heat Pump Types & Benefits
- 🔌 Good Electrification
- 🔌 Install Small (right sizing)



# WHAT'S WRONG WITH GAS?



## Carbon Monoxide Risk

Risk of carbon monoxide emissions from gas combustion (silent, invisible killer)



## Rising Costs

Gas prices are expected to rise 5-10% in the next few years



## Maintenance Problems

More parts equals more problems: burners, blowers, heat exchangers, flues



## Bulk Ducting Required

Gas furnaces are usually oversized



## Air Pollution

Combustion of gas and fossil fuels is unhealthy to breathe, especially for children



## Leaky and Inefficient

Most systems are poorly designed with leaky ducts

# Common Residential Heat Pump Technologies

## Unitary

- ⚡ Traditional heat pump solution
- ⚡ 1 to 2 stages
- ⚡ Base efficiencies (up to 6 breaker spaces!)
- ⚡ Loss of performance at lower temps



## Air to Air Inverter

- ⚡ Mini split
- ⚡ Ductless and ducted
- ⚡ Multi Zone



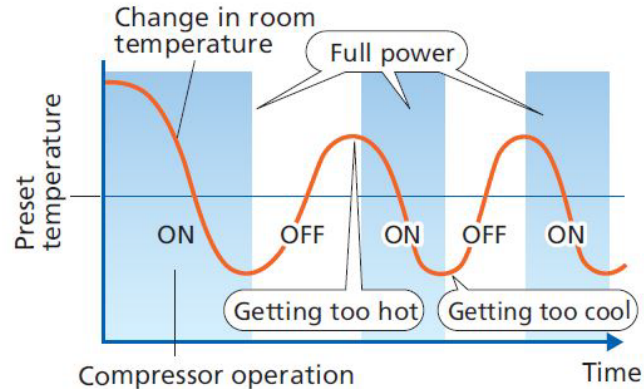


# Inverter vs Traditional: Inverter Wins Every Time!

- ❖ Traditional systems cycle too much
- ❖ Uncomfortable temperature swings for the occupants
- ❖ Cycling allows the building to dictate comfort

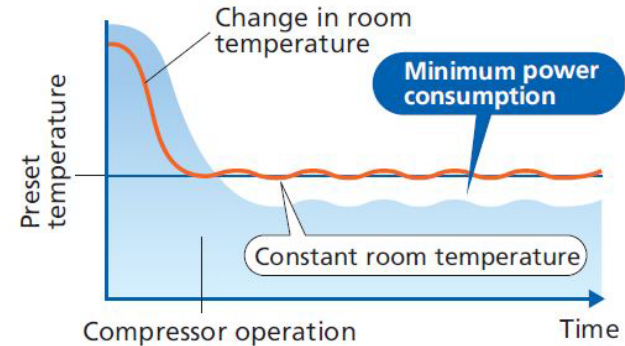
## Traditional Heat Pump

On/Off operation of compressor keeps room temperature



## Inverter Heat Pump

Optimum control of frequency keeps pre-set room temperature





## What is “Good Electrification?”

- ❏ Installing the most efficient solution
- ❏ Adding more load needs space and capacity
- ❏ Consider all electrification requirements from the start

# Guess What – This Isn't It!

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## BAD Electrification = EXTREMELY COSTLY



# Does Your System Look Like This? (Zero Corners Cut)







3



4



5



6

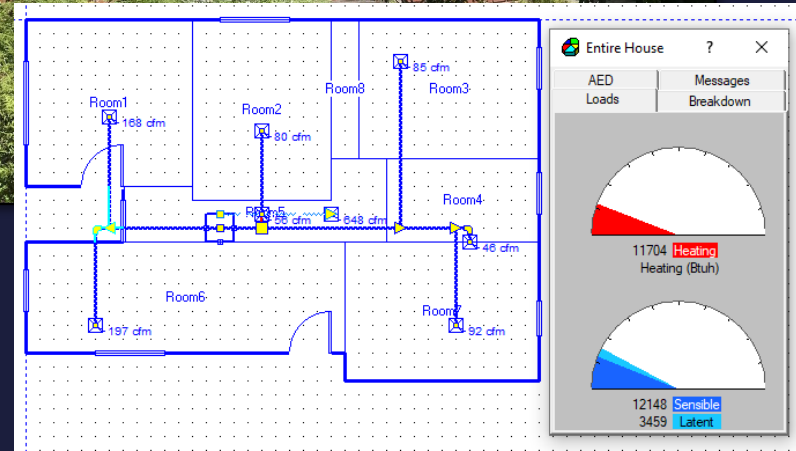
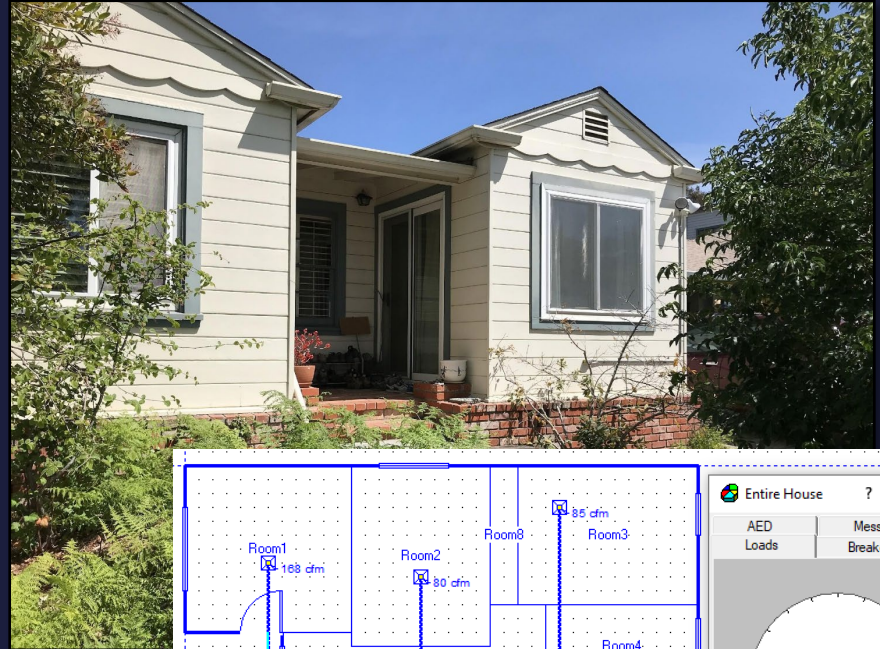
# INSTALL SMALL EXAMPLE Norvell St. [695 sqft/ton]

## Client:

- 🔧 City of Berkeley Sustainability Outreach Specialist
- 🔧 Competing recommendation 40,000 BTU gas, 24,000 cooling

## Site conditions:

- 🔧 Year Built: 1948
- 🔧 Size: 1042 sq ft
- 🔧 Envelope: Insulation blown in to R44, cellulose (by others)
- 🔧 Existing System: 60,000 btu 90% efficient gas furnace in the crawl space
- 🔧 New System: 18,000 BTU



# “Right sized” Heat Pumps Bring BIG Benefits

- 1) Comfort
- 2) Sound
- 3) Enviro. Friendly
- 4) Safer
- 5) Indoor Air Quality



# Now THAT'S Good Electrification!

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