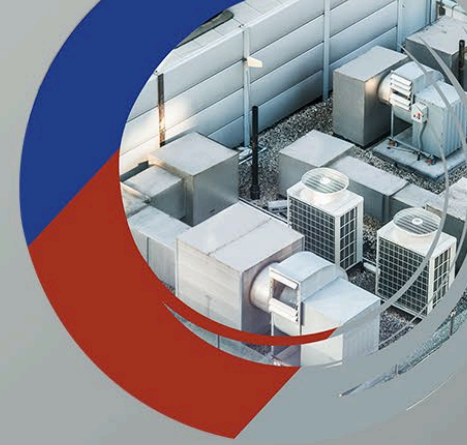


Introductions



Chris Wisniewski – Vice President / Principal

- Degree in Architecture
- Minored in Mechanical Engineering
- HVAC Contracting since 1994



INTEGRATE COMFORT SYSTEMS

Integrate Comfort Systems



1991
ICS hires its first two employees, Wesley and Ted

2003
ICS received recognition from Trane for achieving highest commercial sales in NYC/NJ market

2004
ICS buys the 1st Daikin VRF system sold in the NYC/NJ market

2007
ICS officially opens its Service Department

2014
Lev Minsky celebrates his 10th year anniversary as Project Manager who leads the Installation Department



1990

Integrate Comfort Systems is formed

Greg Wisniewski leaves Trane and starts ICS on December 13th, 1990

1995

Sheet Metal Shop

ICS buys sheet metal fabrication equipment and starts to fabricate its own ducts

2000

Chris Wisniewski

Chris joins ICS full time and become VP of Operations

2004
ICS in NJ

ICS purchases a building in Belleville NJ and sets up their sheet metal operation

2012

ICS moves to NJ

While most of the work remains in NYC, ICS officially moves out of its Brooklyn facilities and opens a second building in NJ

2017

Greg Wisniewski

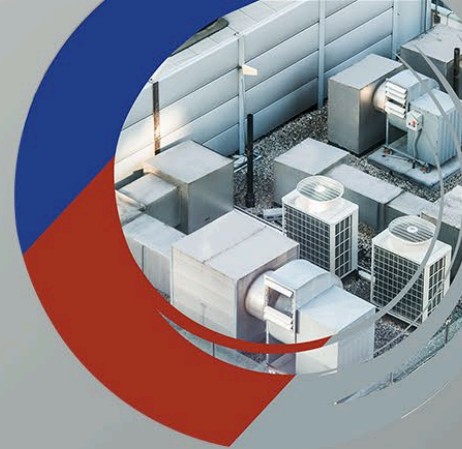
Greg is honored as Man of the Year by the Pulaski Businessman Association for his outstanding dedication and work in the business community

2019

Exclusive

ICS is awarded the largest residential construction project in NYC history

Our Vision is to gain a lifelong partnership with our clients where we can assist them in all necessary means with any HVAC related issues by providing a complete range of service with our expertise

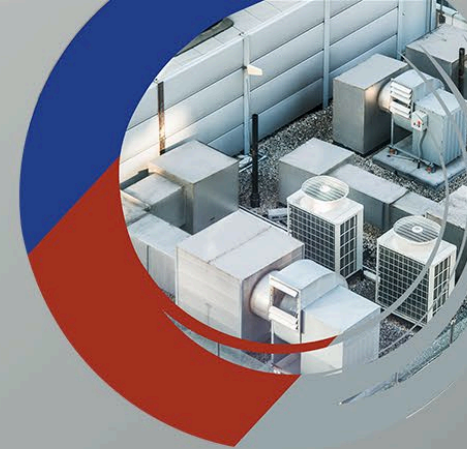


INTEGRATE COMFORT SYSTEMS

ICS Qualifications

The Sky House, NYC

3 Story Penthouse in Lower Manhattan for Google Executive



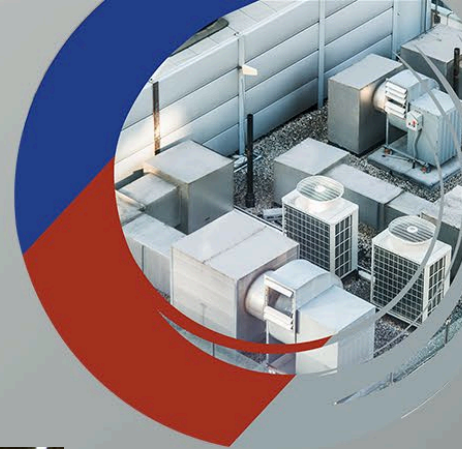
- 18 Water Source Heat Pumps
- 12 Steam Humidifiers
- Complicated Duct Systems
- Architectural Slots
- Automation Controls



INTEGRATE COMFORT SYSTEMS

ICS Qualifications

Grace Episcopal Church - Brooklyn, NY



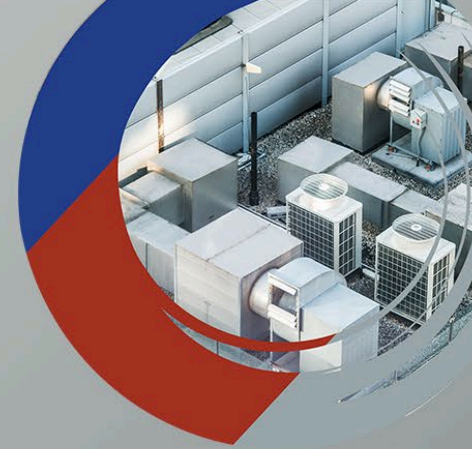
Client over 25 years
Various projects / services



INTEGRATE COMFORT SYSTEMS

ICS Qualifications

145 Perry Street – West Village



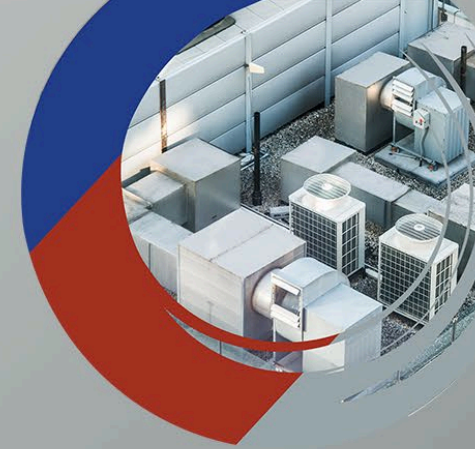
- Twin 30 ton chillers
- 48 Fan Coil Units
- Controls
- Piping
- Pumps



INTEGRATE COMFORT SYSTEMS

ICS Qualifications

Wireless Controls



Urban Office Building



Situation:

- 60k square foot building
- Very uncomfortable in most offices/areas especially on west side of building where major solar gains drove temperatures to 90 degrees on hot Summer afternoons
- 20 HVAC systems

Solution:

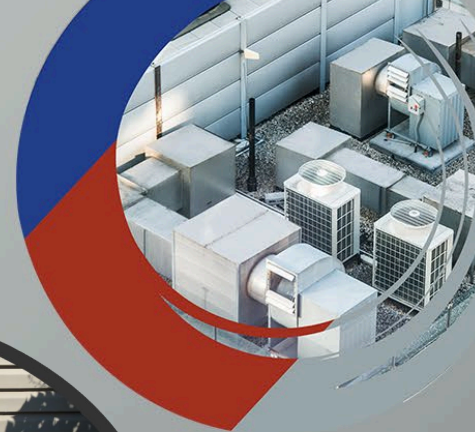
- Installed Emme Wireless Controls
- Twinned air handlers enabling one Emme RBR to control two air handlers
- Twinning enabled sharing of air between different rooms/areas via Emme's smart circulation
- Comfort issues resolved



INTEGRATE COMFORT SYSTEMS

ICS Qualifications

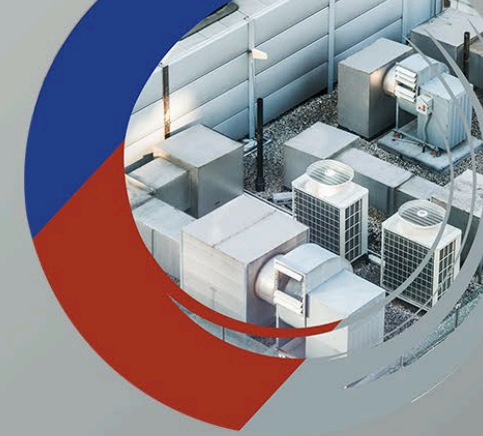
For Every Size Project



INTEGRATE COMFORT SYSTEMS

ICS Qualifications

For Every Size Project



Todd Haskell

3 reviews · 2 photos

★★★★★ 2 years ago -

I hired Chris Wisniewski and his team at ICS to install a Daikin split ductless AC system in my apartment in Manhattan. This was not an easy job, as it required a condenser on my terrace, and two fan coils on different floors connected by line set. In a 110-year old former industrial building, getting through the floors was no easy task. The job was capably handled by a crew chief (also named Chris) with determination and patience, working with my Super to make sure everything was done properly and safely. An original estimate of a 5-day project was done in four days, and it looks great. I'd highly recommend ICS for jobs of this nature.



Ian Goldberg

3 reviews

★★★★★ 3 days ago

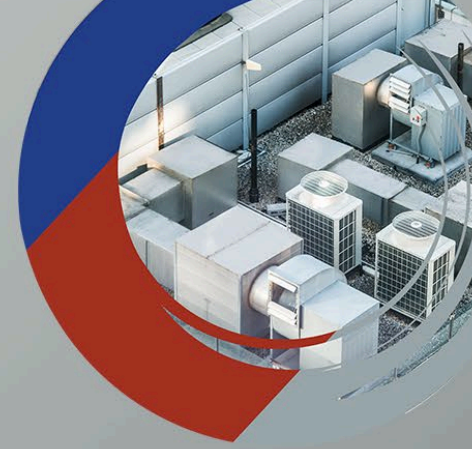
Positive: Professionalism, Punctuality, Quality, Responsiveness

Really professional and responsive team. Outlined scope of work in video + explanation prior. Completed entire job in 2 days. Chris cares about the quality of work and customer satisfaction. Stands behind product. Brandon was great as well, very knowledgeable and helped set me up with my WiFi connection.



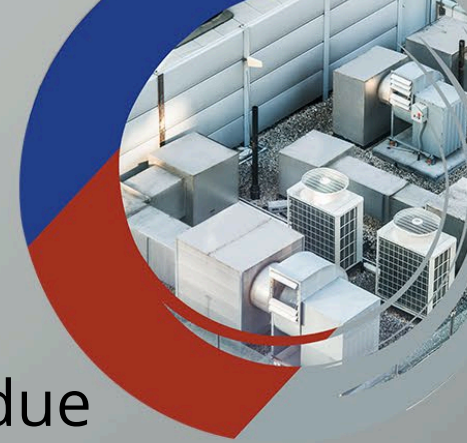
INTEGRATE COMFORT SYSTEMS

Philosophy



INTEGRATE COMFORT SYSTEMS

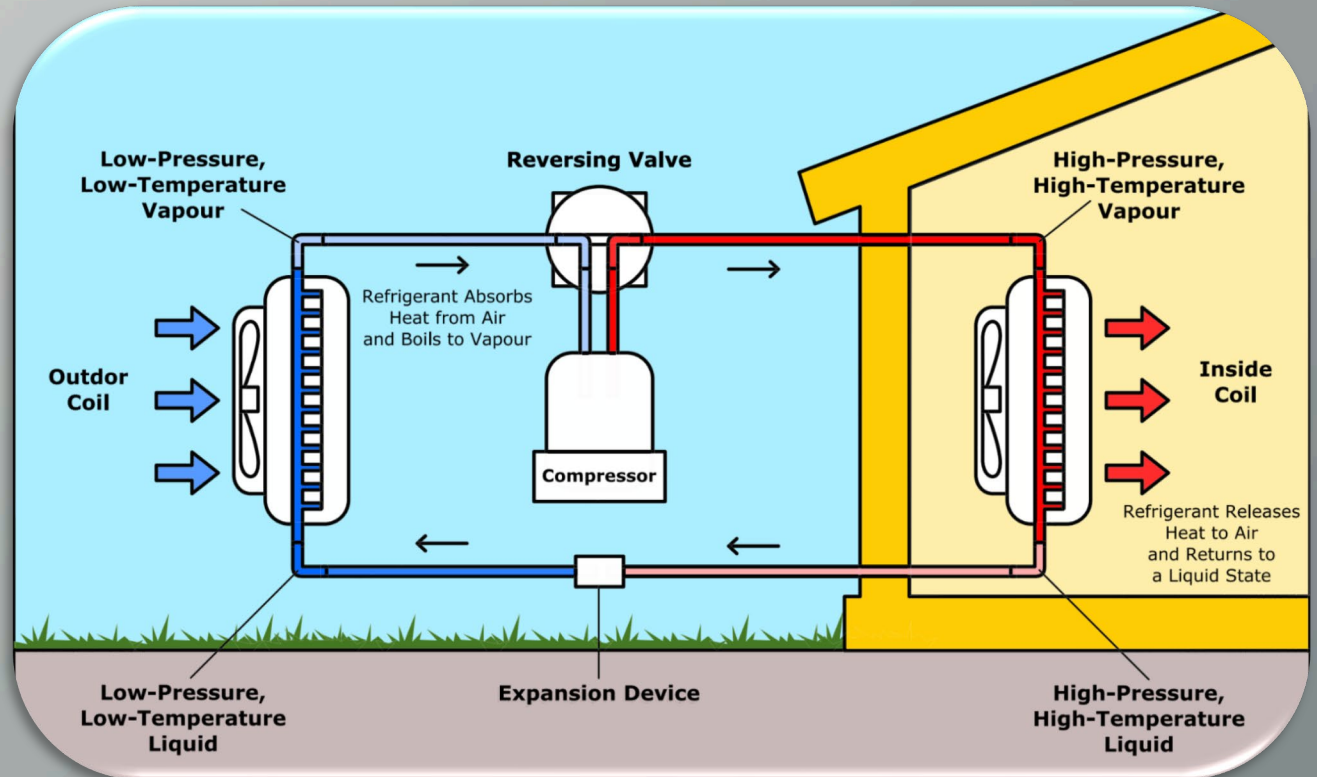
Heat Pumps



Heat pumps are more efficient than other forms of heating, but due to rock bottom natural gas prices they may not save people lots of money. So, finances aren't a big selling point.

Heat Pumps are all about:

- **Comfort**
- **Removing a danger from your home (fire + CO)**



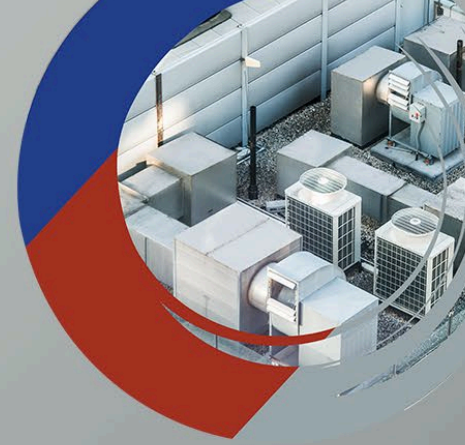
Heat Pumps

Reasons:

- Electrification
- Oil or Propane or Electric
- Danger



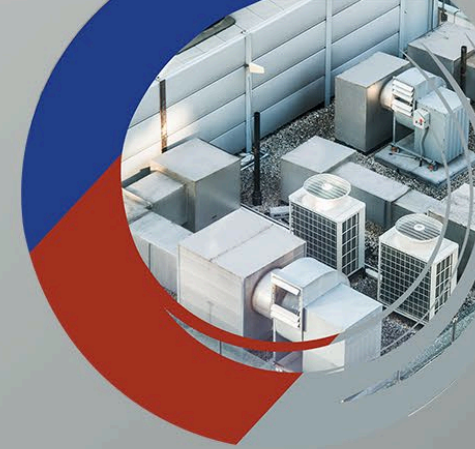
Heat Pumps



Every year, **at least 430** people die in the U.S. from accidental CO poisoning. Approximately 50,000 people in the U.S. visit the emergency department each year due to accidental CO poisoning. There are steps you can take to help protect yourself and your household from CO poisoning.

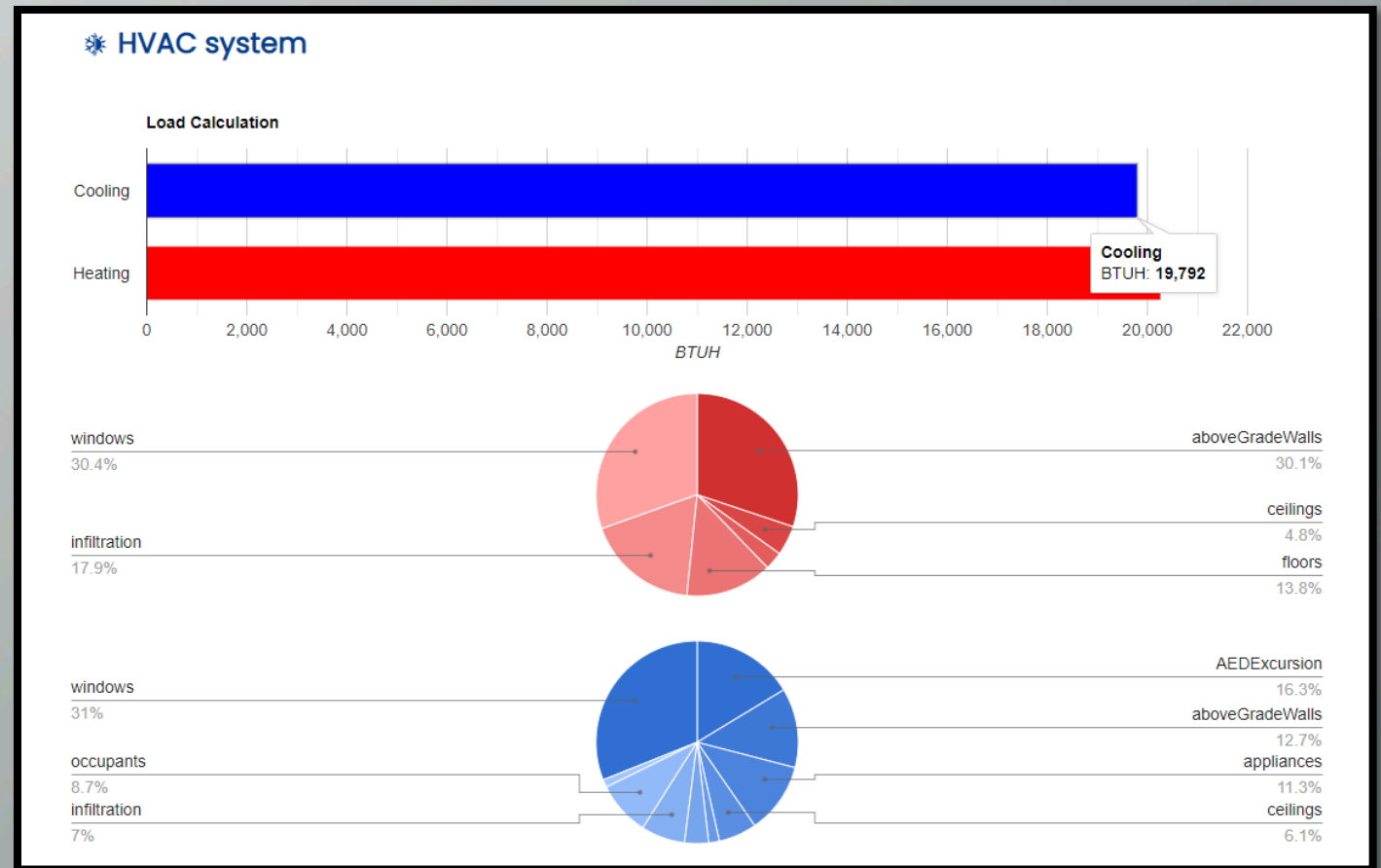


Design



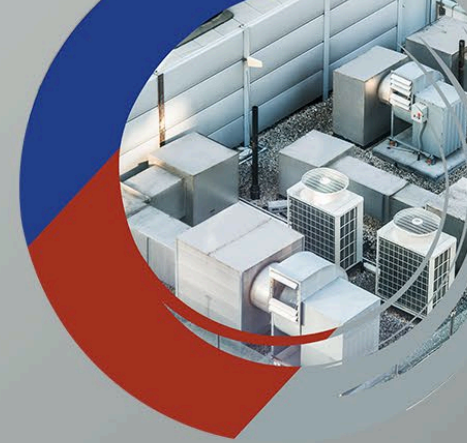
Manual J is the short industry name for Heat Load Calculation or Residential Load Calculation and is performed in order to determine how much cooling and heating a home needs to stay warm in the winter and cool in the summer. If you are considering the purchase of a new HVAC system, your contractor should absolutely perform a Manual J Load Calculation for your home. A Manual J will indicate the proper size of unit that is required for your home.

HVAC systems impact a home's air quality, energy efficiency, and overall comfort. An oversized unit will lead to short-cycling and other risks that will drastically affect these three qualities of your home



Design

- Choosing Equipment that will perform
 - Heat Pump needs to be cold weather type
 - Proper turn down ratios
 - Base Pan Heater



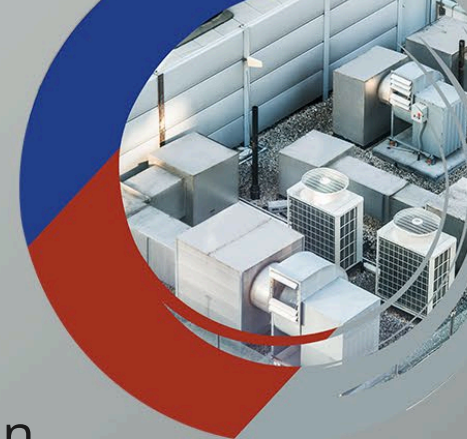
OPERATING RANGE:

	Outdoor
Cooling	D.B. 14 to 115° F [D.B. -10 to 46° C]*1
Heating	W.B. -13 to 65° F [W.B. -25 to 18° C]

*1. D.B. 5 to 115° F [D.B. -15 to 46° C], when an optional Air Outlet Guide is installed.



Design

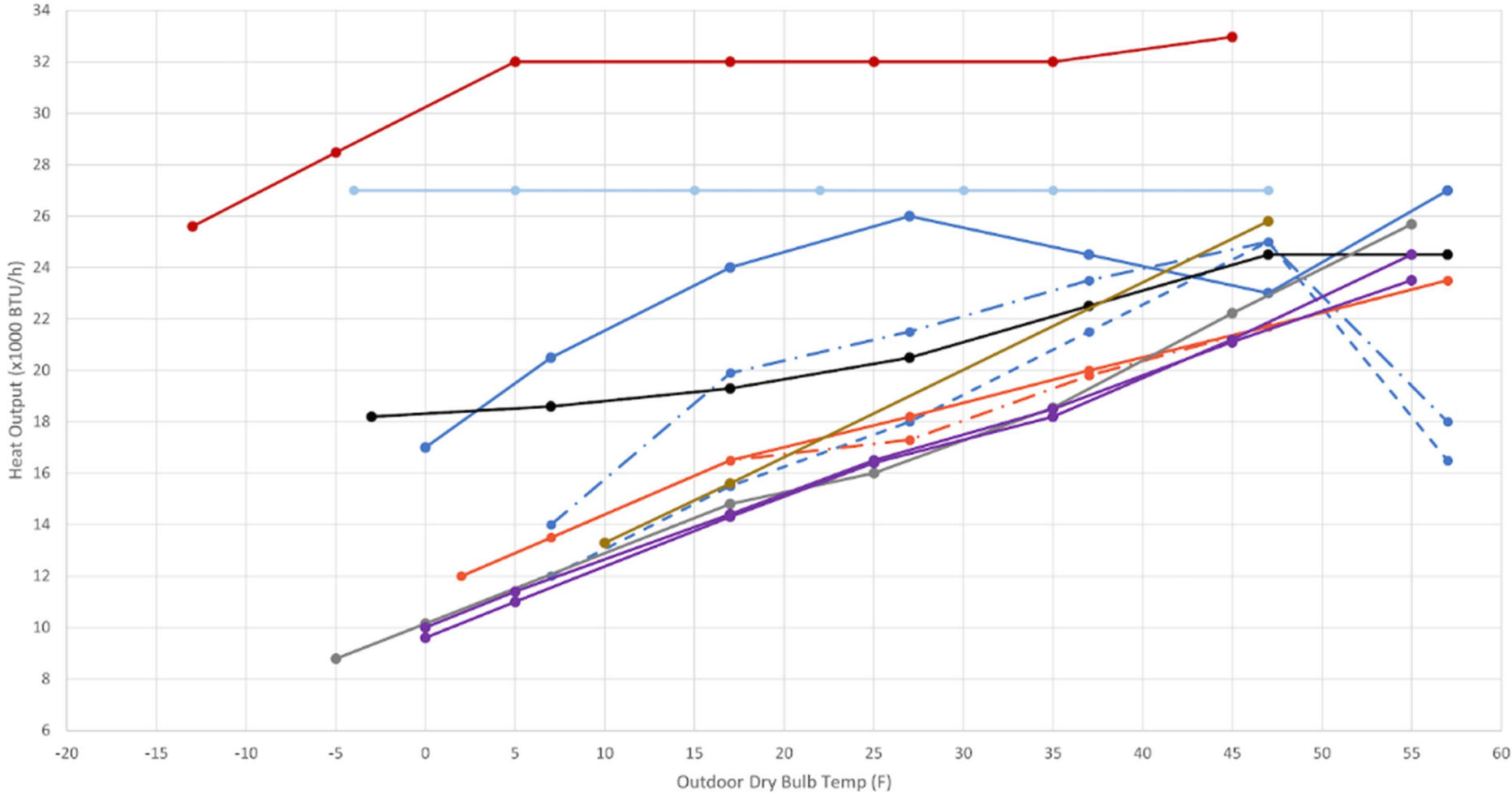


In mildly cool weather there's really not much of a competition between heat pumps and furnaces that burn fossil fuels. Heat pumps tend to lead the pack in efficiency by a healthy margin. The question gets more complicated when temperatures drop to the teens or lower. Advocates for gas and oil furnaces argue heat pumps lose efficiency at those low temperatures, but that argument is based on the assumption that all heat pumps are made equal.

Heat pumps designed and sold in markets with mild year-round weather generally aren't designed to operate efficiently at extremely low temperatures. Heat pumps sold and installed by companies like ICS in New Jersey are designed with those low temperatures in mind.



Heat Pump Output vs Outdoor Temperature - 2 Ton



- Carrier VNA024
- Carrier VNA824B
- Carrier VNA825 24A
- Trane 18 4TWV8024A
- Trane 20 4TWV0024A
- Bosch 24 AHU + BOVA 36
- Goodman GSZC180241C
- York YZE02411
- Armstrong (Lennox) 4SHP20LX24
- Armstrong (Lennox) 4SHP16LS24
- Daikin RZQ24 + FTQ24
- Mitsubishi PUZHA30 + PVAA30



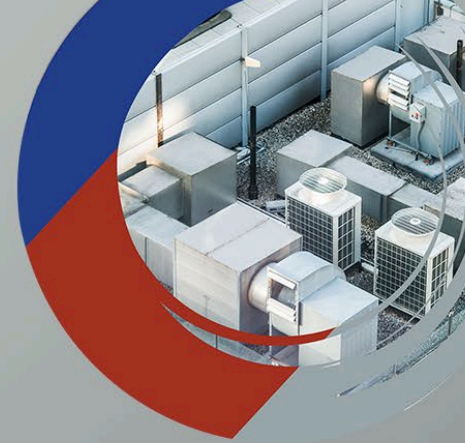
INTEGRATE COMFORT SYSTEMS

Design

Comfort

The American Heritage Dictionary of the English Language identifies room **temperature** as around 20–22 °C (68–72 °F), while the Oxford English Dictionary states that it is "conventionally taken as about 20 °C

The ideal relative **humidity** for health and **comfort** is somewhere between 30-50% **humidity**, according to the Mayo Clinic



Design

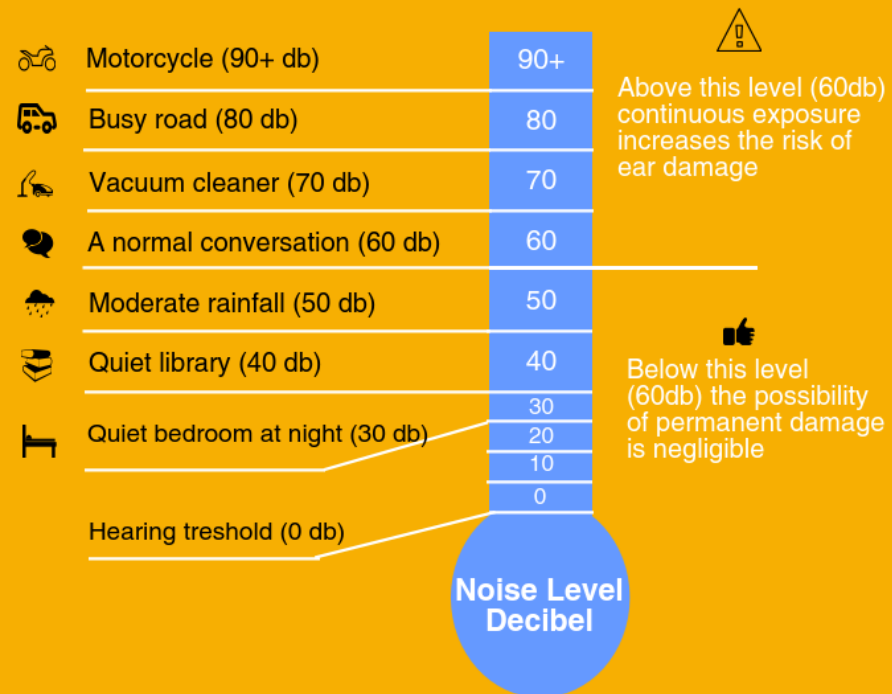
Quiet

Condenser 54 dBA

Wall Fan coil 19 dBA

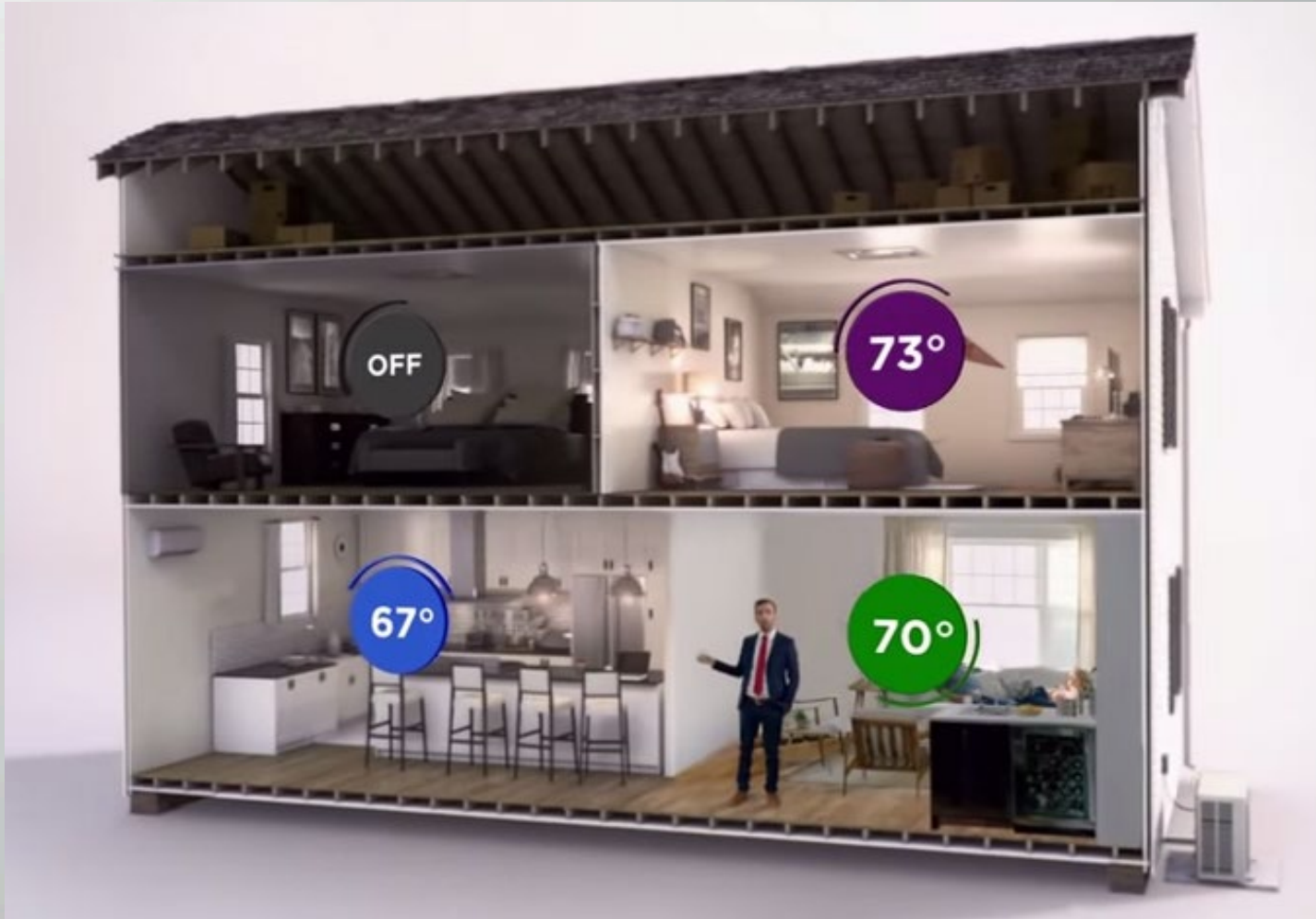
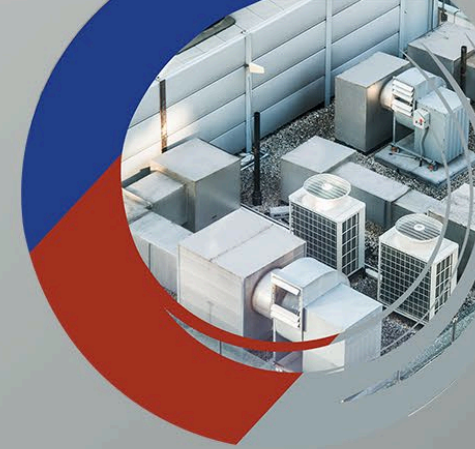


How much noise is too much?



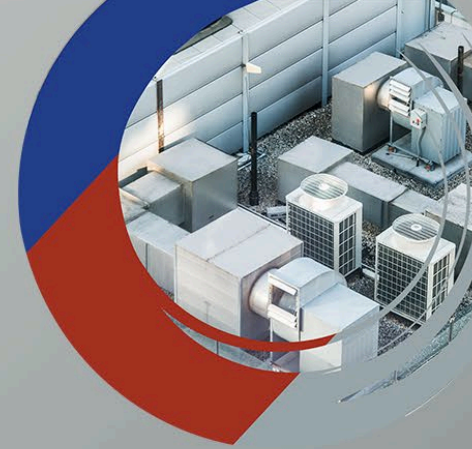
INTEGRATE COMFORT SYSTEMS

Ducted vs Ductless



INTEGRATE COMFORT SYSTEMS

Ducted vs Ductless



Ducted	Ductless
Covers larger area	More and smaller zones = more control over each room
Loss in ductwork	More efficient
Visually nicer (just grilles)	Units visible in the rooms
Takes up room in basement – may make ceiling space extremely low	Small footprint
Better at filtration	
Better at removing latent heat (humidity)	
Have to settle between 12,18,24,30,36 sizes	More precise sizing available 6,9,12,15,18



Heat Pumps

Smallest Hi-Eff Furnace is going to be 60,000 BTUH. They can modulate down to ~29,000 BTUH



Smallest Heat Pump is 6,000 BTUH and can modulate down to 1,600 BTUH

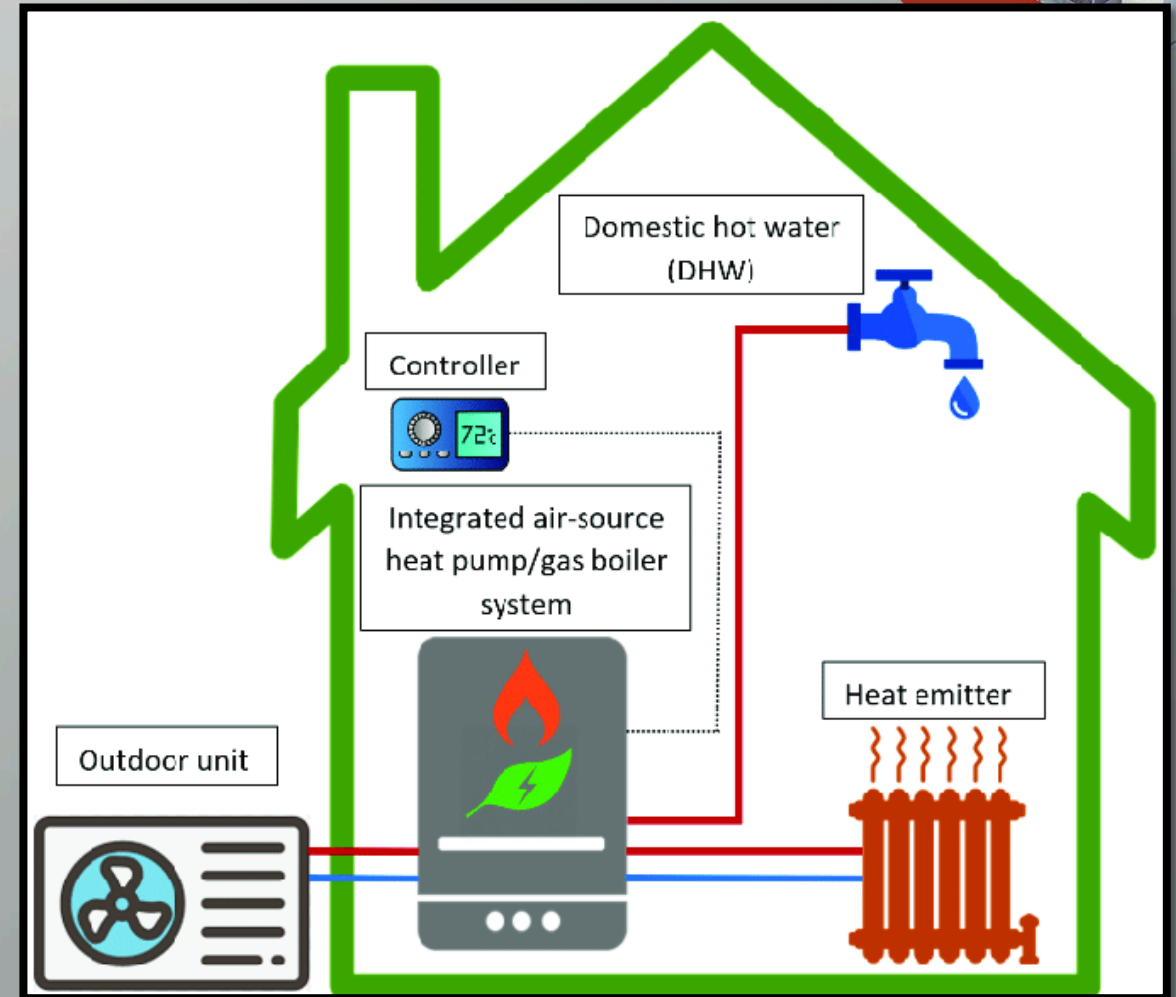


INTEGRATE COMFORT SYSTEMS

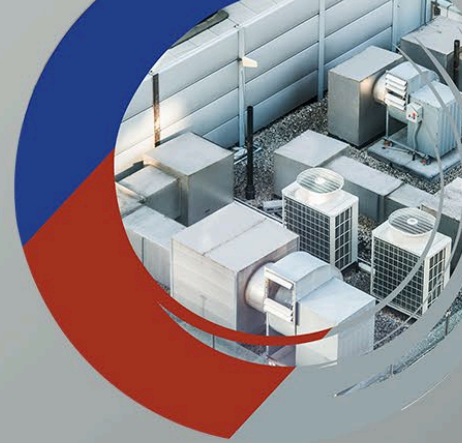
Hybrid Heat Pump



A hybrid heat pump, or dual fuel heat pump, is a **unique spin on a traditional all-electric heat pump system**. A dual fuel system is appropriately named as it uses both an electric heat pump and a fossil fuel gas furnace (natural or propane gas) much like a hybrid automobile uses gasoline and electric.



Heat Pumps

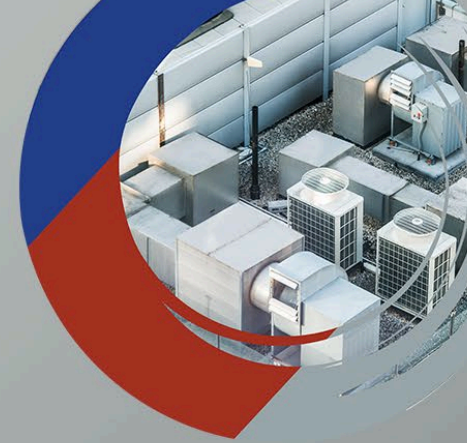


Cost of fuels comparison

As of 3-24-2022



Solar



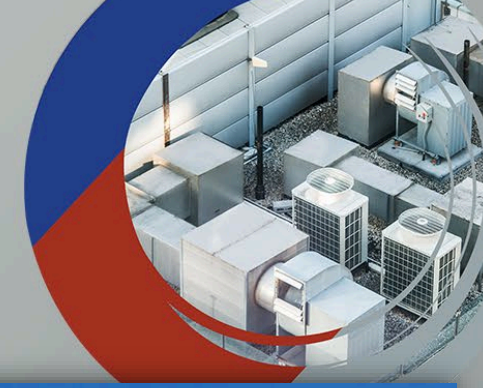
Next Logical Step



INTEGRATE COMFORT SYSTEMS



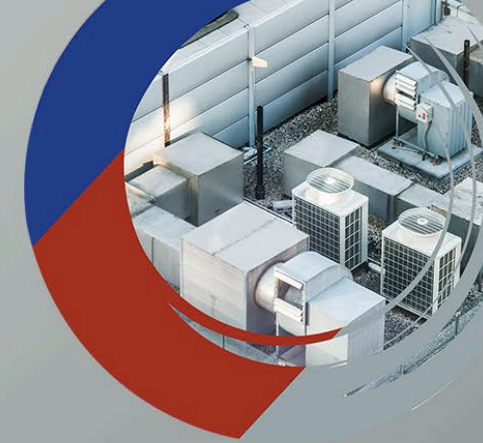
Solar



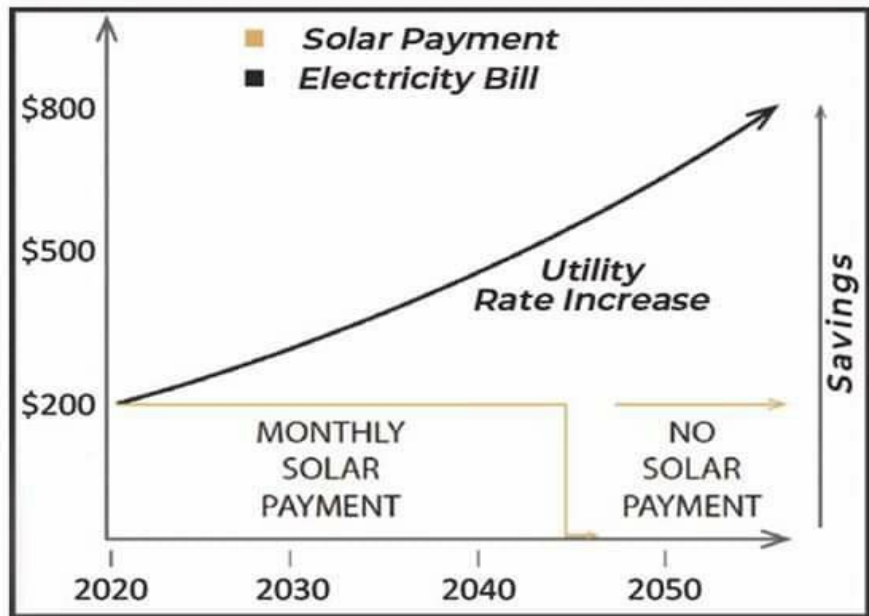
- **Next Logical Step – Once you electrify you are adding stress to the electric grid and increasing your utility cost**
- **Capture any portion of your electrical usage – whether it be 10-100% - its better than not doing any portion**
- **You need the roof space and you need the sun**



INTEGRATE COMFORT SYSTEMS



COST OF DOING NOTHING



AVG \$175/MO

\$2,100 A YEAR

5 YEAR AVG

\$223 BILL

\$2,676 A YEAR

15 YEAR AVG

\$364 BILL

\$4,368 A YEAR

\$100,000+ OVER 25 YEARS



INTEGRATE COMFORT SYSTEMS

Solar

US to extend Investment Tax Credit for solar at 30% to 2032

As written in the Inflation Reduction Act of 2022, the tax credit will begin at 30% and step down to 26% in 2033 and 22% in 2034.

JULY 28, 2022 **RYAN KENNEDY**

COMMERCIAL & INDUSTRIAL PV

HIGHLIGHTS

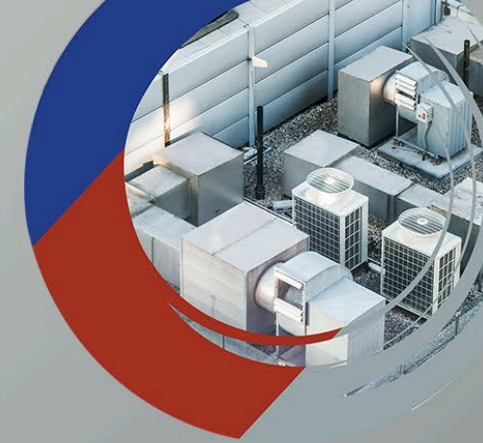
MARKETS

UTILITY SCALE PV

UNITED STATES



Image: 8minute Solar Energy



INTEGRATE COMFORT SYSTEMS

NJ State SREC II

[Solar Renewable Energy Credit](#)

System type	Size	Incentive value per SREC-II
Residential net-metered	All types and sizes	\$90
Small non-residential net-metered (rooftop, carport, canopy, floating solar)	Projects smaller than 1 MW	\$100
Large non-residential net-metered (rooftop, carport, canopy, floating solar)	1 MW to 5 MW	\$90
Small non-residential net-metered ground mount	Projects smaller than 1 MW	\$85
Non-low-middle income (LMI) community solar	Up to 5 MW	\$70
LMI community solar	Up to 5 MW	\$90
Interim subsection (t) projects	All types and sizes	\$100

**As an example:
If you produce 10,000 kW from solar**

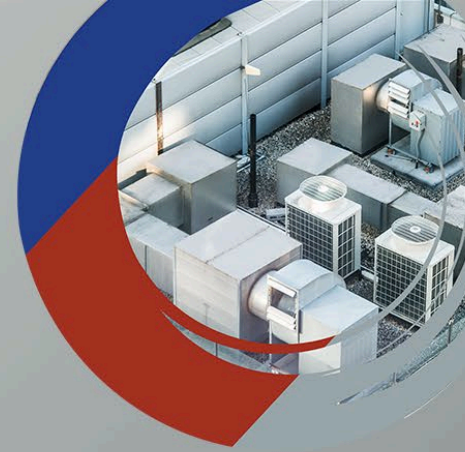
You will receive

Monthly: \$75

Annually: \$900

Lifetime over 15 years: \$13,500

Chris Wisniewski – chris@icshvac.com



Incentives

<https://www.rewiringamerica.org/app/ira-calculator>