Bradley Mechanical

We'll Get You Outta The Fix You're In

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Advice from industry veteran, Brad Bradley...

Buying New Heating & Cooling Equipment?

Be Sure To Get The Utility Savings, Comfort, Clean Air and Peace of Mind You Pay For.

As homeowners, we don't usually pay much attention to our air conditioners. However, like all mechanical products, they don't last forever. If now is the time to replace yours, invest the time to become an informed consumer and do it right.

In addition to the big issue of equipment choices and investments, our clients routinely ask:

- "How can we minimize future utility and repair bills?"
- "How can we ensure it will have a long life and help prevent premature breakdowns?"
- "Will our new equipment even out temperatures between rooms and levels?"
- "Can you make the new unit run quieter?"
- "What else can we do to reduce dust and allergy suffering?"

If any of these issues are also important to you, I encourage you to become more informed about the opportunities from resolving pre-existing duct system issues. In over 43 years serving your area, I can confidently say our happiest clients are those who chose to also upgrade their ductwork when they installed new equipment.

We have reproduced the enclosed Comfort Institute consumer fact sheet so that you understand ahead of time why your System Designer will also be inspecting and discussing your ductwork. We encourage you to check out the educational tips and videos on our website at www.bradleymechanicalva.com/newsystem In particular, watch the eye-opening **"This Old House" TV episode** on duct sealing.

On behalf of the Bradley Mechanical team, thank you for the opportunity to serve you. Please do not hesitate to call me personally if I can help!

Brad Bradley

Look Inside:
Get educated before talking to contractors!

COMFORT INSTITUTE

CONSUMER TIPS

When Replacing Your Old Furnace,
Heat Pump or Air Conditioner...

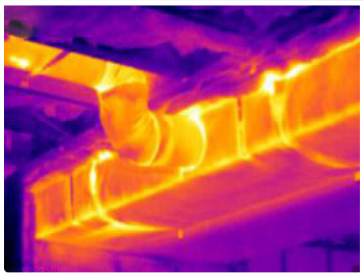
Don't Ignore Your Air Ducts!

FACT #1

90% of Newly Installed Systems Have Energy-Wasting Mistakes

When you buy a new TV, refrigerator or window AC, you can just take it home and plug it in - it works as intended. Not so for new high efficiency central air conditioners, heat pumps and furnaces. They must be very carefully selected and installed in order to deliver comfort, work at their advertised laboratory rated performance, and save money on your utility bills.

Unfortunately, government and utility company research shows that 9 out of every 10 new systems have energy wasting mistakes due to errors or oversights by the installing contractor. Many homeowners see little - or none - of the promised utility bill savings. In other words, the system may be "working", but not to its full capabilities.



Infra-red thermal imaging makes invisible duct leakage visible (heating example).

ENERGY STAR

"Newly installed heating and cooling systems that are over-sized, improperly charged, or connected to a poorly designed and installed duct system will not deliver the rated efficiency.

Homeowners may think they are buying a high efficiency EnergyStar 14 SEER cooling system and in fact, the operating efficiency may be closer to a 10 ... and consequently they are not getting what they paid for.

Overlooking duct improvements may compromise comfort and cost you money. Be sure to get what you pay for by complementing your efficient equipment purchase with properly sealed ducts."

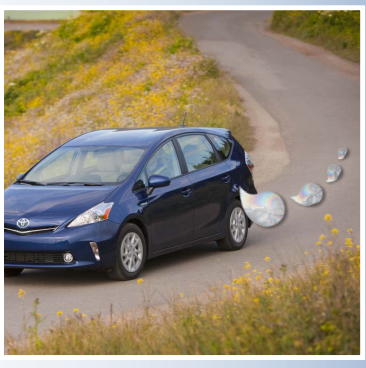
ENERGY STAR

FACT #2

Existing Duct Systems Leak Air & Choke The Airflow

The old duct system which the new equipment is connected to is usually the weak link in the chain. Built before today's more stringent building codes, over 90% of older duct systems leak excessively, and most are also under-sized which restricts the airflow.

Government and utility research finds that for every dollar spent to run the typical air conditioner or furnace, 25 to 40 cents is wasted. A duct system upgrade is a great investment. Authorities say it pays for itself through lower utility bills - equal to a 10% to 33% annual return on investment, tax free. Many utilities offer $ rebates towards the cost.



Connecting new high efficiency equipment to the typical low efficiency leaky duct system, is like buying a super fuel-efficient hybrid car ... and then driving it with leaks in the gas tank.

U.S. DEPARTMENT OF ENERGY

"Typical duct systems lose 25 to 40 percent of the heating or cooling energy put out by the central furnace, heat pump or air conditioner. Duct repairs could be the most important energy improvement measure you can do."

U.S. Department of Energy

Pacific Gas and Electric Company

"It does not make sense to install a new, energy efficient heating and/or air conditioning unit unless the duct system is also energy efficient. The ducts offer one of the best opportunities to increase your energy efficiency & comfort."

Pacific Gas and Electric Utility

Money

"Even if you have the most efficient furnace and air conditioner known to man, if the ducts that funnel that precious hot air or cold air around your house are in bad shape, you'll still lose way too much energy."

Money Magazine
Sept. 2007 Issue

Consumer Reports

"Duct sealing is a great way to improve efficiency, because 25 to 40 percent of conditioned air is lost through ducts that leak.

You'll need to hire a pro, but sealing can save hundreds of dollars per year."

Consumer Reports Magazine
Oct. 2014 Issue

ENERGY STAR

"Ask your contractor to inspect your ducts for leaks, incomplete connections, and compatibility with the rest of your system. Ideally, your contractor should use diagnostic equipment and fix leaks using a quality duct sealant (duct tape is not sufficient). He or she also may recommend changes to your duct system."

"Sealing and insulating ducts can help with common comfort problems, such as rooms that are too hot in the summer or too cold in the winter."

ENERGY STAR

Southface

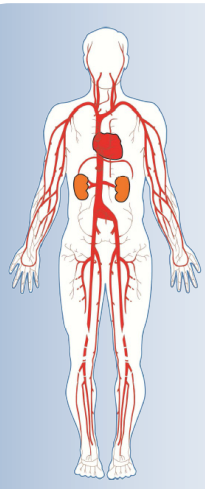
"For an average home, leaky ducts can waste hundreds of dollars each year. Duct leakage also lowers the heating and cooling capacity and can lessen equipment life."

Southface Energy Institute

Sources Referenced:

www.energystar.gov
www.energy.gov
www.southface.org
www.pge.com
www.money.com
www.consumerreports.org

FACT #3



The HVAC equipment is the heart of your comfort system, and the ducts are its veins & arteries.

When doing an "HVAC heart transplant" ensure your ducts are not "blocked or hemorrhaging".

Modern Equipment Is Much More Sensitive To Bad Ducts

An inefficient duct system will lower the performance of your new high efficiency equipment even more than it hurt the old unit.

1. Modern more efficient indoor air-circulating blowers deliver more airflow. Good!
2. But the side effect of more airflow is higher pressures in your ducts.
3. Higher pressures make existing duct cracks and gaps leak more precious air.

Increased duct leakage will claw back much of the potential energy savings from your new high efficiency equipment. Like taking two steps forward … then one step back.

More duct leakage also usually worsens uneven temperatures and increases indoor dust, summertime humidity and winter dryness.

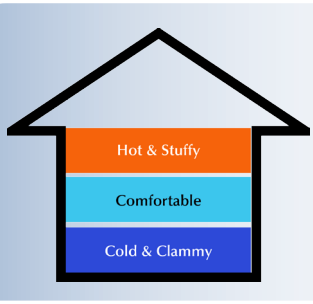
FACT #4

Old Ducts Can Strangle New Equipment

Restricted undersized ductwork for your equipment is like choked inflamed airways for an asthma sufferer.

If your old ducts are restricted and undersized, the new blower motor will strain to overcome this, greatly increasing electrical consumption and noise.

FACT #5



New Equipment Alone Will NOT Solve Comfort Problems

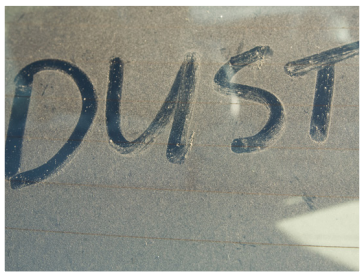
- ✔ *Do you have rooms that are uncomfortably hot or cold?*
- ✔ *Do you have an entire floor that's too hot or cold?*
- ✔ *Did your old AC run non-stop on the hottest days & the whole house got warm?*

Don't just assume newer equipment will solve uneven temperature issues. A bigger unit will often make comfort issues worse. The real causes are usually a bad duct system and/or missing house insulation. Sealing duct leaks and making duct modifications are proven ways to even out temperatures & control indoor humidity.

FACT #6

Sealed Ducts = Less Dust & Healthier Air

Sealing ducts just makes sense: stop wasting money and improve comfort. But for many families, the biggest benefit has been an immediate reduction in dust on the furniture, and less allergy and asthma suffering.



ENERGY STAR

"Fumes from household and garden chemicals, insulation particles, and dust can enter your duct system, aggravating asthma & allergy problems. Sealing ducts can help improve indoor air quality by reducing the risk of pollutants entering ducts circulating through your home."

ENERGY STAR

Even many basement-style homes inadvertently suck nasty insulation fibers, mold spores, pollen, rodent allergens or carbon monoxide from the attic or garage into the home - via gaps in the hollow wall and floor cavities used to carry return air.

Sealing duct leaks will also help keep your ducts and equipment from getting dirty - which reduces future repair and utility bills.

FACT #7

Sealed Ducts Help the Environment

Duct leakage wastes $25 Billion each year nationwide. If every homeowner in America sealed their ducts, the US Environmental Protection Agency says the environmental and National Security benefits would be the same as:

Shutting Down 12 Nuclear Reactors

Not Burning 250,000 Railway Cars of Coal Every Year

Not Importing 48 Supertankers of Middle East Oil Every Year

What Are My Duct Upgrade Options?

While every home and duct system is different, if opportunities are identified the most common recommended upgrade choices are:

A. Totally replace the old ducts with a new ductsystem that is properly engineered and sealed.

B. Have all the existing ducts sealed from the inside using the Aeroseal process (typically over 90% reduction in leakage), and enlarge the return air system.

C. Hand seal only the accessible old ducts using paint-on mastic paste (typically 40% -70% reduction) and enlarge the returns.

In all cases insist that your contractor test the before & after duct leakage and duct static pressure, and certify the results.

How To Choose A Contractor

A good contractor will evaluate your existing duct system, and explain any recommended improvements and financing options. Duct upgrades can be most easily & economically done at the same time your new equipment is installed.

Carefully consider your options in order to get a new trouble-free system you will enjoy for years to come.

Be suspicious of any contractor who doesn't follow industry best practices and neglects to assess and discuss your existing ducts. They either don't know about the latest research, or don't care. Many simply don't want to do labor intensive duct repairs. They make faster money by just selling equipment, slapping it in and moving on. Don't let it happen to you.

COMFORT INSTITUTE

Founded in 1998, Comfort Institute provides homeowners with unbiased consumer protection information; and contractors with best practices continuing education & tech support.