



The Science of Livability:

Enhancing Comfort for the Way We Relax and Work



Chapter 1 **What is comfort?**

Comfort and energy efficiency
Comfort is more than temperature
Factors affecting thermal comfort
Comfort is personal and situational

Chapter 2 **Benefits of being comfortable**

Comfort and your well-being
Improved health
Better sleep
Elevated productivity
Optimal livability

Chapter 3 **Air conditioning systems and comfort**

The role of air conditioning and comfort
Single-stage systems
Two-stage systems
Variable speed systems
VRF systems

Chapter 4 **Enhancing comfort further**

Technologies playing a supportive role
Internet of things (IoT)
Thermostats
Controls and monitoring systems
Indoor air quality
Ceiling fans

Chapter 5 **Emerson advancing the science of comfort**

Exploring new possibilities
Inside the Helix Innovation Center
Modulating compressors
Copeland Scroll™ compressor with modulation control
Sensi™ Touch Wi-Fi thermostat
Supervisory Controls
Emerson voice activated Wi-Fi fan

Chapter 6 **Answering the call for comfort**

Eight tips to talk comfort with your customers
Other resources & tools

Most people equate the term “livability” with determining the quality of life offered by a particular community, city or state. Does it have good schools? What is the cost of living? How is the local economy?

But livability can also apply to a home or commercial building. And a large part of that equation is the level of comfort offered by that structure. It can mean everything from the right temperature that allows you to relax or work without being distracted, to indoor air quality that does not trigger your asthma or cause migraines. Contractors, builders and consulting-specifying engineers have a unique opportunity to educate customers on the impact comfort has on livability – as well as the impact HVAC can have on comfort.

This e-book is designed to give you the information you need to have a conversation with your customers about comfort; a conversation that will hopefully help them understand the vital role HVAC equipment, technology and upgrades play in improving livability.





CHAPTER 1

What is Comfort?

COMFORT AND ENERGY EFFICIENCY

The HVAC industry has traditionally focused on energy efficiency when it came to building new homes and facilities or convincing residential and commercial customers they need to update heating and cooling equipment. However, the effectiveness of energy efficiency as a selling point is beginning to wane.

This does not mean it is no longer important. Rather, most customers view it as a given that with today's advanced technologies, government regulations and industry standards, their systems will be efficient. And quite honestly, most customers have a limit for how much they are willing to pay or sacrifice for energy efficiency.

Instead, contractors, consulting-specifying engineers and builders should talk about comfort. Most people have a strong personal desire to be comfortable. They may not pay extra for a five percent energy efficiency increase, but they might pay more for a comfortable work environment that improves productivity or indoor air quality that does not agitate their child's asthma.

While we are advocating a greater focus on comfort, what we are actually offering is a balanced approach. Much of the advanced technology that can create a healthy, comfortable living space also delivers incremental energy efficiency benefits.

According to the EPA, people in the U.S. spend about **87%** of their **TIME INDOORS.**



69% at home



18% at work/
other locations

COMFORT IS MORE THAN TEMPERATURE

But what is comfort? What does it mean to be comfortable? You may not always recognize when you are, but you definitely notice when you are not. It is more than just feeling too hot or cold. There are a number of other variables that have an impact on overall indoor comfort. For instance:

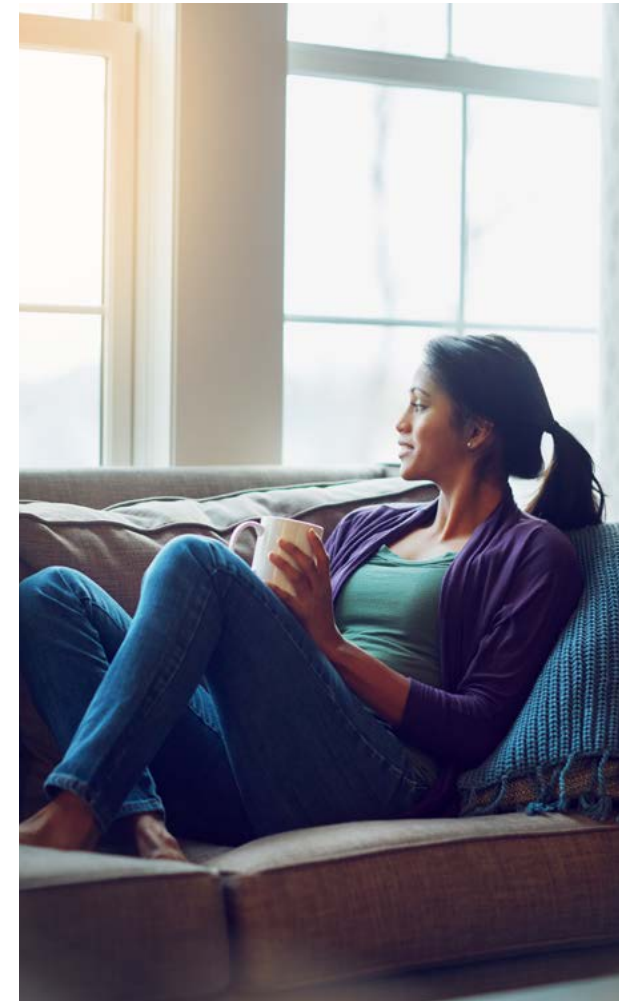
Humidity – High humidity can cause condensation and mold growth, which can trigger allergic reactions and breathing issues. Low humidity can cause dry skin and sore throats.

Air Quality – Indoor air pollutants (e.g., pollen and chemicals) can cause headaches, skin and eye irritation, fatigue, respiratory issues, Sick Building Syndrome (SBS), as well as exacerbate preexisting medical conditions.

Lighting – Certain lighting options (e.g., fluorescent) can cause headaches and eyestrain, while others (e.g., incandescent) convert much of the energy they consume into heat.

Sound – disruptive indoor noise (e.g., loud air conditioning units or ventilation) can negatively impact sleep and concentration levels.

Odors – As most people know, certain odors can enhance comfort (e.g., fresh baked bread). Other odors (e.g., bleach, mildew) can cause headaches and trigger migraines.



FACTORS AFFECTING THERMAL COMFORT

According to ASHRAE Standard 55, there are two factors that affect whether a person feels hot or cold: environmental and personal.

Environmental Factors



Air Temperature – temperature of the air surrounding the body. This is the one we think about the most and is controlled with heating and cooling systems.



Air Circulation – the speed of air moving across a person or in an environment. For example, still or stagnant air may cause people to feel stuffy.



Humidity Levels – the amount of moisture in the air. For example, high humidity slows evaporation from the skin, which doesn't allow the body to cool naturally.



Radiant Effects – heat that radiates from warm objects, like the sun, ovens, clothes dryers, etc.



Personal Factors



Metabolic Rate – level of activity, i.e. sitting, sleeping, working out.



Clothing – too much or too little clothing.

COMFORT IS PERSONAL AND SITUATIONAL

Comfort is personalized and situational. Everyone's comfort level is different and changes based on activity and environmental conditions. For instance, it's okay to sweat if you are running on a treadmill. However, if you are watching TV or in a meeting, it is not okay. A cooler temperature during bedtime is good. Being cold while eating dinner or listening to a lecture is not.

It is important to have a conversation with customers about comfort to understand how they live or how they use their facility. This will also help them understand just how HVAC can impact their comfort levels.



“Comfort is personal. Most individuals have a stronger desire to be comfortable than to be energy efficient. Telling someone they can save \$200 a year on their energy bill is not as impactful as telling them they no longer have to be too hot when they sleep or have migraines from office lighting.”

– Rajan Rajendran, vice president of System Innovation Center and Sustainability at Emerson Commercial & Residential Solutions



CHAPTER 2

Benefits of Being Comfortable



COMFORT AND YOUR WELL-BEING

As mentioned in the previous chapter, being comfortable is more than just temperature. However, many people believe comfort is defined by a numerical thermostat setting. Whether in a home or commercial building, most people would probably agree that being comfortable is all about not being too hot or too cold.

Fortunately, for the purposes of having a discussion on comfort, that is only a small part of the story. There are a number of benefits from which to determine whether or not a home or office building is truly comfortable. While our customers most likely know when they are comfortable, they may not fully understand why or how that comfort is impacted by HVAC.

As contractors, builders and consulting-specifying engineers, it is very important to help customers understand the far-reaching benefits of being comfortable. Ultimately, we want them to agree that comfort should be an important determining factor when making HVAC decisions.

The following pages highlight some of the most important benefits that come with creating and maintaining a comfortable environment.



IMPROVED HEALTH

The comfort level of a residential or commercial building can have a significant impact on the health of the occupants. Factors within comfort can sometimes either make you sick or worsen a pre-existing condition. For instance, in the previous chapter we mentioned certain lighting and odors can cause headaches and trigger migraines.

On the commercial side, one example of how health can be effected is [Sick Building Syndrome](#) (SBS). According to the U.S. Environmental Protection Agency (EPA), SBS is when building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified. Indoor air quality and poor ventilation has been cited as one of the possible causes of SBS.

For someone living with asthma, the comfort level of the house can also be an issue. According to the Asthma and Allergy Foundation of America, eight out of ten people are exposed to dust mites on a daily basis in the United States, and six out of ten are exposed to pet dander. This can trigger asthma symptoms and attacks. Having the right filtration system on your air conditioning system can remove these particles from the air.



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QUICK TIP

Ask customers if any family members suffer from asthma or severe allergies and talk to them about adding a secondary filtration method.

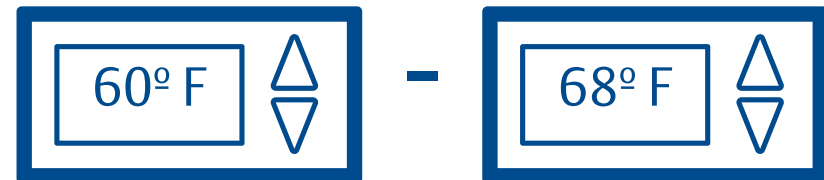
BETTER SLEEP

There are many factors that can impact a good night's sleep: stress, uncomfortable bed, outside noises, too much caffeine, a snoring partner and, of course, your air conditioning system. Room temperature and humidity, along with sleeping attire and blankets can also have a big impact on how well you sleep.

This is one personal experience with which nearly everyone can relate. For the majority of us, it can be very difficult to fall, and stay, asleep if you are too hot or cold. According to the [The New York Times](#), studies have found that in general, the optimal temperature for sleeping is around 60 to 68 degrees Fahrenheit. Temperatures above or below this range can often lead to restlessness. Humidity level can also play a role. If the humidity is too high, it can be too muggy and cause breathing difficulties.

For commercial buildings, it's all about keeping employees awake and alert. If the office temperature is too warm, employees can become tired and sluggish, especially right after lunch.

Optimal temperatures for sleeping are



QUICK TIP

For customers with two-story homes talk to them about upgrading to a zoned air conditioning system.

ELEVATED PRODUCTIVITY

Numerous research has shown that indoor air temperature and circulation can impact your level of productivity, as well as your ability to learn, concentrate and remember important information. While this applies to residential and commercial environments, the greater impact is often on the commercial side.

A [2006 study](#) from the Lawrence Berkeley National Laboratory Environmental Energy Technologies Division, found that workplace performance increased when the room temperature was between 69.8 degrees and 71.6 degrees Fahrenheit. [The U.S. Occupational Safety and Health Administration](#) recommends office temperatures ranging from 68 degrees to 76 degrees Fahrenheit and humidity ranging from 20 percent to 60 percent.

Of course, most of us don't need any research to confirm what we know from experience: if you are too hot or cold, you are distracted and can't concentrate.



OPTIMAL LIVABILITY

Livability is one of those things that you know it when you see (or feel) it. It's basically the sum of a number of factors that make up the quality of life. On a large scale, it can be used to determine the quality of life in certain cities or countries. On a smaller scale, it can focus on a residential or commercial building.

Comfort is a significant factor in the livability within homes and office buildings. Depending on how you view it, the previous three benefits could even be filed under livability. Your quality of life is, in part, determined by how comfortable you are. If you're not comfortable in your home, it may be hard to relax and enjoy life. If you're not comfortable in your office, you may dread going to work. Being comfortable affects your mood and outlook. There is a reason people speak fondly of "comfort food." And, now creating that "no place like home" feeling can be achievable anywhere.

Creating that
**"no place
like home"**
feeling can be
achievable anywhere.





CHAPTER 3

Air Conditioning Systems and Human Comfort

THE ROLE OF AIR CONDITIONING AND COMFORT

Traditionally, most people view air conditioning systems as serving one singular purpose – providing continuous cool air during hot summer months. And while some may realize that controlling moisture in the air and air circulation can play a role, most simply think of these systems as a means of lowering the indoor temperature of homes and commercial buildings.

Today's air conditioning systems have advanced beyond just providing consistent thermal comfort. Many systems feature advanced technologies that allow them to play a significant role in overall human comfort and livability.

As contractors, builders and consulting-specifying engineers it is important to understand the different types of air conditioning systems and the impact they can have on comfort. It is equally important that we use this knowledge to help customers make the right decision based on how they relax and work and the level of comfort they want to achieve.

In this chapter, we will review four main types of systems with which you should be familiar: single-stage, two-stage, variable speed and VRF systems.

To determine which system best suits your customer's personal setting, have them consider things like:



Price



Efficiency



Temperature control



Humidity control



Overall air quality

SINGLE-STAGE SYSTEMS

Single-stage systems are what most people think of when they think of air conditioning. When the indoor temperature exceeds the setting on the thermostat, they begin working. Once the temperature reaches the desired setting, they switch off. They are continuously turning on and off.

These systems have a single-stage compressor, which means that when they are running, they are operating at 100 percent capacity. This is not very efficient. These short cycles of very cool air can lead to uneven temperatures and increased humidity levels, especially in large commercial buildings and multi-level homes.

The main benefit of single-stage systems is that, as an initial purchase, they are one of the least expensive options. And, increases in minimum SEER have made these systems more efficient than systems of the past. However, they do not provide the same comfort benefits as two-stage and variable speed systems.



QUICK TIP

Highlight different system options for your customers. For just a little more money, they can upgrade to a two-stage system and enjoy more comfort benefits.



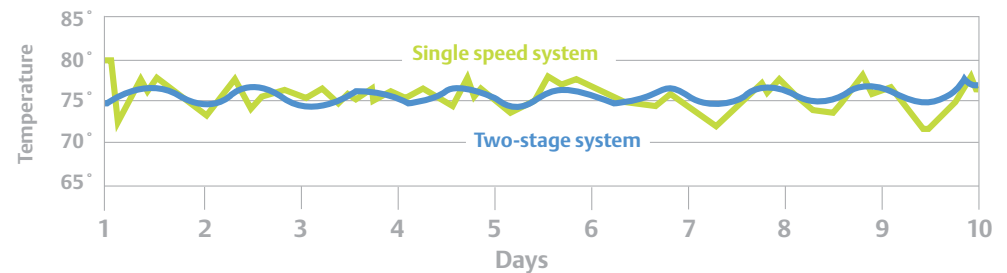
TWO-STAGE SYSTEMS

These systems operate at two speeds: high and low, with compressor capacity changing based on needs and conditions. On mild summer days, the systems run at a low, steady speed with the compressor operating at 65 percent of full capacity. On very hot days, the systems blast cold air, with the compressor at full capacity.

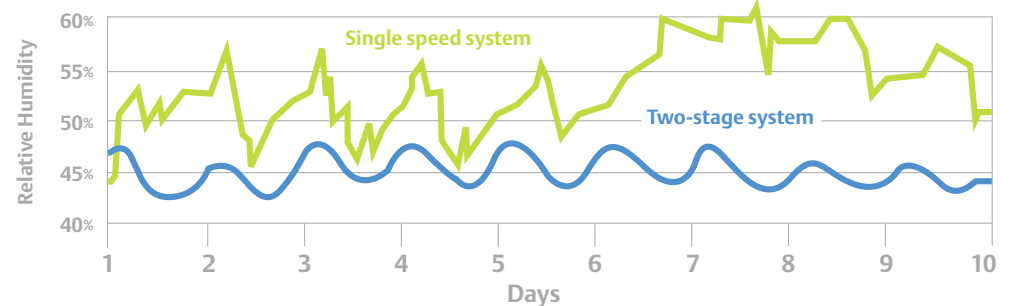
This approach allows longer run cycles that reduce relative humidity and maintain more even indoor temperatures for improved indoor comfort. Since the systems are using low speed for the majority of the time to cool the home or building, it is also more energy efficient. Longer, quieter cycles also mean the systems create less noise than single-stage systems.

Two-stage systems are an affordable option to meet efficiency requirements and customer demands for improved comfort.

Temperature Field Test Results



Relative Humidity Field Test Results

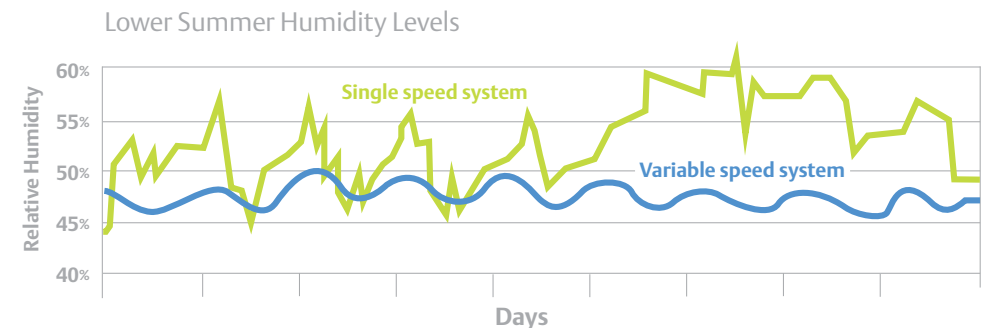
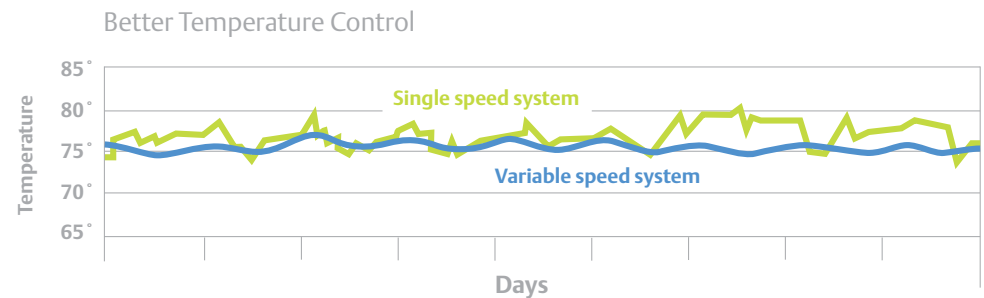


VARIABLE SPEED SYSTEMS

Variable speed systems can continuously adjust their cooling capacity to better match the exact amount of cooling needed at any given time. For instance, on a hot day, they will ramp up capacity to cool down the home or office quickly. Once the space cools to the desired temperature, the systems automatically switch to a lower capacity to maintain the desired comfort level.

By offering different gradients of capacity based on needs, these systems are highly efficient for both residential and commercial applications. They easily maintain the optimal indoor environment by providing year-round comfort, lower humidity levels and better temperature control. Because these systems are continuously on, relative humidity does not have a chance to increase, which means consistent, lower humidity levels.

Since this is a more advanced cooling technology, variable speed systems do have a higher upfront cost than both single-stage and two-stage systems. But it also offers greater energy savings over a longer period of time.



VRF SYSTEMS

Variable Refrigerant Flow (VRF) systems are a type of heat pump air conditioning system that moves refrigerant thru the home to the various indoor air handlers, instead of using hot or cold air that is circulated through the ductwork. They feature an outdoor unit connected by refrigerant piping to several indoor units (air handlers) that are mounted on the walls or ceilings to set up cooling zones in residential and commercial buildings. The flow of refrigerant can be controlled for each individual unit.

One of the biggest benefits of these types of systems is that the indoor units work in harmony and the systems automatically adjust capacity and output based on demand from the units. As one indoor unit is turned off or on, the systems recalculates the requirements and adjusts compressor output based on the new level of demand. With some systems, you can even simultaneously cool one zone while heating another. The ability to modularly expand the system also makes it an attractive option for commercial buildings.

The downside of this technology is that special installation requirements, such as the network of refrigerant pipework needed, can make it a costly installation. If the installation is not done just right, it can have a lasting impact on the performance level and lifecycle of the system. Also, since refrigerant is the cooling material, leaks can be a problematic issue.





CHAPTER 4

Enhancing Comfort Further

TECHNOLOGIES PLAYING A SUPPORTING ROLE

While today's advanced air conditioning systems can have a major impact on overall human comfort and livability, there are a number of technologies (some new) that can work with the systems to further deliver comfort gains.

Following are a few of those technologies:

- Internet of things (IoT)
- Thermostats
- Controls and monitoring systems
- Indoor air quality
- Ceiling fans

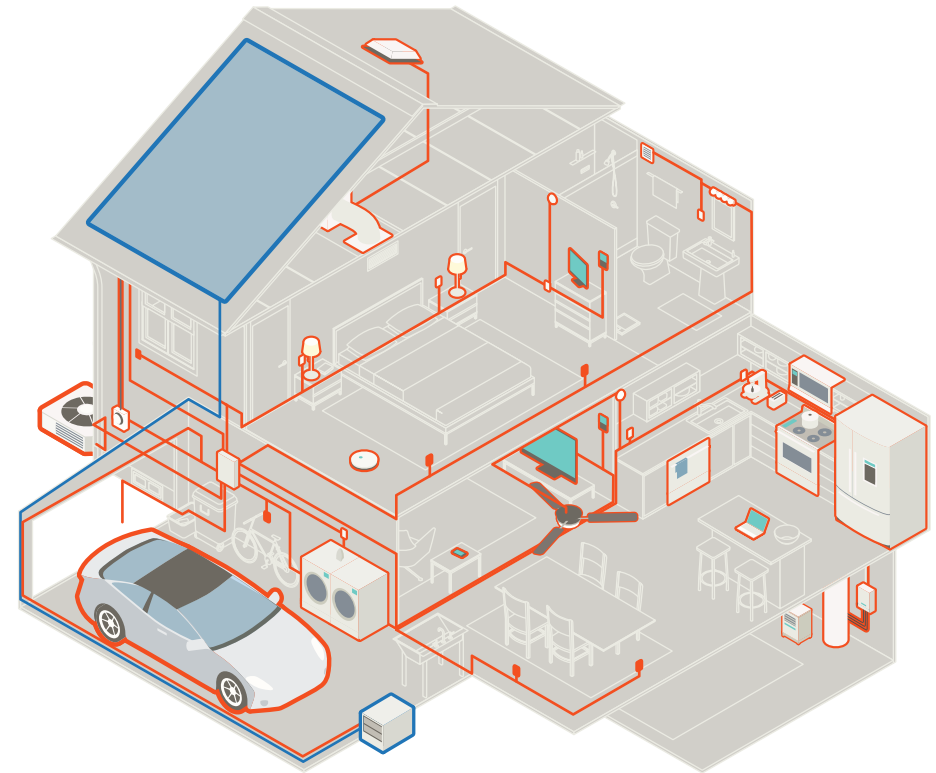


INTERNET OF THINGS

The Internet of Things (IoT) isn't necessarily one piece of technology. It is a trend and concept that is impacting technology across industries by delivering a new level of connectivity that is changing the way we interact with technology, data and each other.

A common definition of IoT is the network of connected objects and machines that are embedded with computing devices and sensors that enable them to collect, send and receive data. [A 2014 Forbes article](#) described it more simply as the “concept of basically connecting any device with an on and off switch to the Internet (and/or each other).”

So, what affect is this having on comfort and livability? Look no further than the growing trend of smart homes and buildings. IoT is evolving HVAC technology to the point where not only do our customers have greater control over their environment and systems, but the systems (based on real-time and archival data) can adapt to changing conditions and needs to ensure continuous and consistent comfort.



In **2018** BI Intelligence expects
U.S. consumers to buy and install
55 MILLION
smart home devices

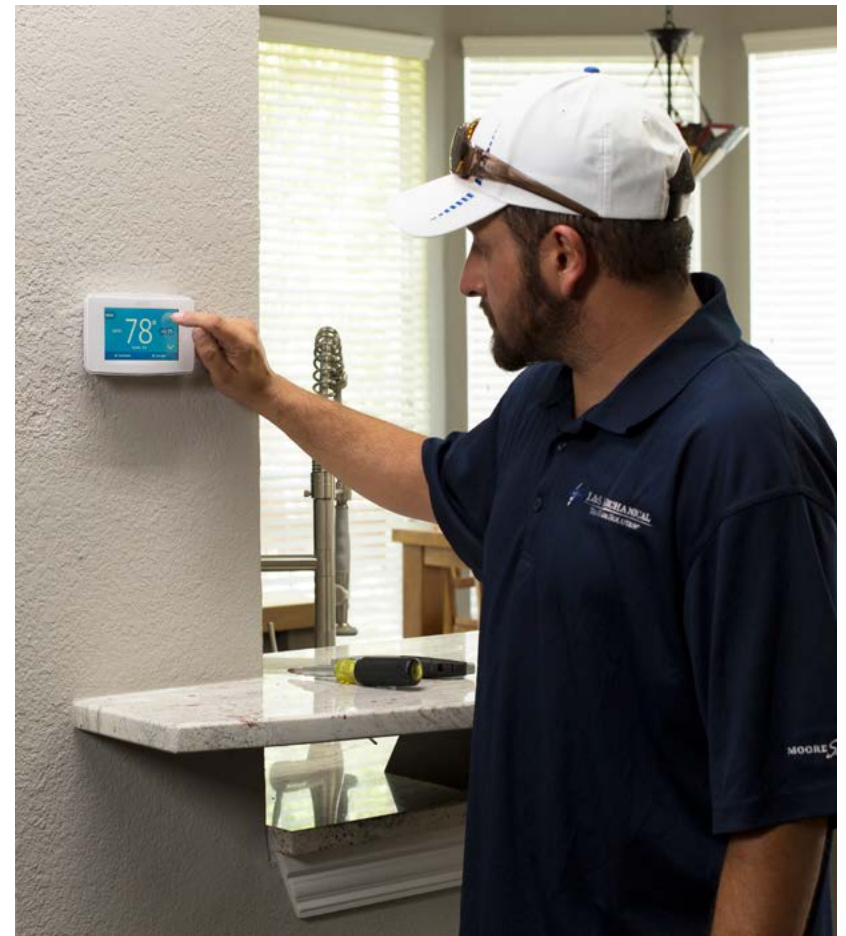
Source: Business Insider, BI Intelligence 35 Big Predictions for 2018

THERMOSTATS

Thermostats are one of the prime examples of how IoT is changing how we view and interact with HVAC equipment.

Most people are familiar with programmable thermostats, which have been available for a number of years. However, research shows that over 70 percent of homeowners who have programmable thermostats do not use the programmable features. Common reasons for this is that people don't have the time or motivation to program it, or they simply forget they have the feature. (If your customers have programmable thermostats, encourage them to use it.)

Relatively new to the market are Wi-Fi enabled thermostats that offer homeowners the convenience of monitoring and controlling their comfort—anywhere and anytime. Employing the IoT concept, they give homeowners the ability to adjust the temperature of their home from a cellphone, table or PC. The key is convenience. For those who think programing a thermostat takes too much time, they can now easily adjust the temperature on their phone right before they leave work to ensure a comfortable environment when they arrive home.

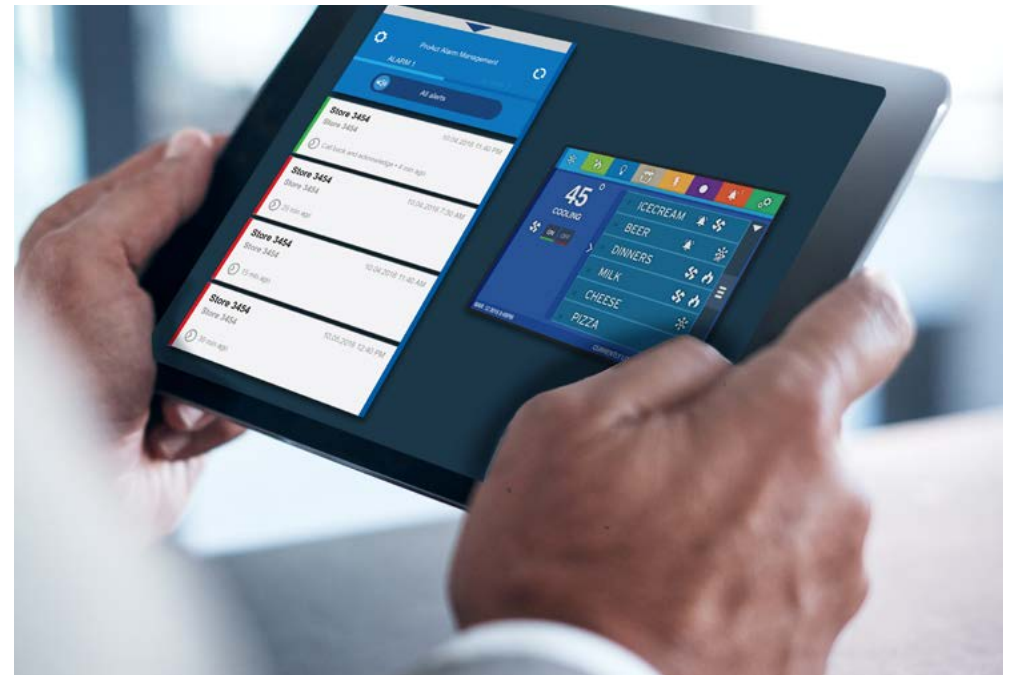


CONTROLS AND MONITORING SYSTEMS

Greater connectivity is also allowing greater control and visibility on a larger scale. This is especially important on the commercial side, where owners and managers are responsible for the comfort level of an entire building or even a network of buildings located across a region.

Today's systems allow building operators or managers to monitor and manage HVAC, lighting and other critical equipment and systems. They collect and analyze data, generating key performance indicators, allowing operators and managers to quickly and easily improve building occupant experience and comfort based on internal and external factors, including occupancy level and outside weather.

The growth of IoT-enabled devices is also driving the growth of intelligent applications that make it easier for operators and managers to gather and effectively use the data gathered by building management systems (BMS) and environmental monitoring systems (EMS). These cloud-based applications allow end users to make decisions and take action faster on more current data rather than solely making decisions on historical data.

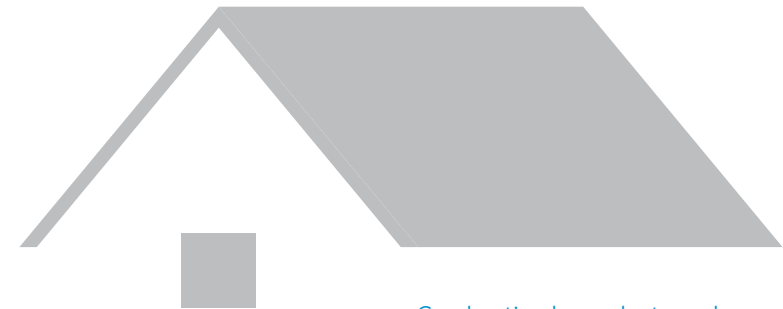


INDOOR AIR QUALITY

While indoor air quality is important for the comfort and livability level of residential and commercial spaces, it is especially important for the health and well-being of its occupants. According to the U.S. Environmental Protection Agency (EPA), Americans, on average, spend about 90 percent of their time indoors; where the concentrations of some pollutants are often two to five times higher than typical outdoor concentrations.

There are a number of products and technologies available that work with air conditioning systems to keep indoor air clean, fresh and healthy.

For example, UVC lights installed in HVAC systems kill microbes as they pass through the system and prevent mold growth on system coils. Additionally, whole house media air cleaners filter the air throughout the home, reducing airborne allergens, bacteria, pollen, mold spores, fine dust, pet dander and particles that carry viruses.



90%
of our life is
spent indoors

2-5x
more pollution
indoors than
outdoors

Common indoor air pollutants

- Combustion byproducts such as carbon monoxide, particulate matter, and environmental tobacco smoke
- Substances of natural origin such as radon, pet dander, and mold
- Biological agents such as molds
- Pesticides, lead, and asbestos
- Ozone (from some air cleaners)
- Various volatile organic compounds from a variety of products and materials

Source: <https://cfpub.epa.gov/roe/chapter/air/indoorair.cfm>

CEILING FANS

Fairly new to the smart home category are [connected ceiling fans](#) that allow homeowners to program and control the fan from their phone. These app-enabled smart fans provide another convenient way for homeowners to control their personal comfort.

Traditional (disconnected) ceiling fans still have a lot to offer for enhancing indoor comfort, especially at a room-by-room level. They can be used as a stand-alone device or in conjunction with an HVAC system to improve the comfort in a space. The biggest benefit is with air circulation.

In warmer weather, homeowners can set the ceiling fan to run in the counterclockwise direction to push cool air down and create a comfortable breeze. In colder weather, a clockwise running ceiling fan moves the warmer air down from the ceiling and along the walls to re-circulate it.



QUICK TIP

Tell homeowners to switch their fan's spin direction during the time change in fall and spring when they are also adjusting their clocks.





CHAPTER 5

Emerson Advancing the Science of Comfort

EXPLORING NEW POSSIBILITIES

Emerson is committed to accelerating the next generation of innovation to help solve some of the world’s biggest heating and cooling challenges. We are actively working within the HVAC industry and with partners to increase the pace of innovation in areas that are central to safety, quality of life and sustainability. This effort is not only resulting in new technologies, but also research that is fostering a new understanding in how HVAC can improve and promote greater comfort and livability.



INSIDE THE HELIX INNOVATION CENTER

One such effort that is fueling new kinds of research, collaboration and conversations within the industry is [The Helix Innovation Center](#). Located on the campus of the University of Dayton, the center is an industry-first, \$35 million hub dedicated to advancing research and education for the global HVACR industry.

Since opening in 2016, The Helix has become a place where Emerson collaborates with customers, HVACR industry partners and competitors, as well as experts from other industries who can bring [new perspectives to specific challenges](#).

The Helix features full-scale, real-life physical environments, including a working commercial kitchen, grocery store and its centerpiece – a fully functional, two-story 2,000-square-foot residential home. These areas offer research teams an opportunity to do rapid prototyping and use practical applications to develop and test their innovations for enhancing residential and commercial building controls, efficiency and comfort. The hub also provides a place where industry trends and issues, can be explored and addressed, including improving food safety, capitalizing on IoT connectivity, and using Big Data to better manage heating and cooling.



A fully functional house is built inside a climate-controlled hangar sealed with heavy doors. Large heating and cooling systems simulate the sun’s effect, allowing researchers to study the home’s energy performance on a single day in climate’s like Alaska, Arizona or Florida.

MODULATING COMPRESSORS

Modulating technologies allow systems to run at varying capacities to meet cooling demands. Emerson offers a [full line of modulating compressors](#) for residential and commercial applications that change capacity based on the need, increasing temperature control, dehumidification, efficiency, reliability and comfort.

A system with a modulating compressor can provide a longer lasting and less intense airflow, which keeps rooms at a more precise temperature and allows its occupants to have better comfort control while they sleep, relax or work, with fewer cycles than a fixed speed unit. Since modulating HVAC systems run more consistently, more air is cycled through the system, which removes moisture, and a lower indoor humidity is achieved.



| | Variable Speed | Two-Stage | Multiples |
|--------------|----------------|-----------|-----------|
| Residential | 1-6 HP | 1.5-6 HP | |
| Commercial | 10-15 HP | 6-10 HP | 3-120 HP |
| Applied Cost | \$\$\$ | \$ | \$\$ |
| Comfort | ++++ | +++ | +++ |

COPELAND SCROLL™ TWO-STAGE COMPRESSOR WITH MODULATION CONTROL

The latest innovation in Emerson’s modulated compressor lineup is the Copeland Scroll™ two-stage compressor. It is designed for residential and commercial air conditioning systems and helps customers achieve the comfort and efficiency they want at an affordable price. The compressor can run at 65% part-load capacity during times when only part-load heating or cooling is needed or at full capacity when demand increases.

It utilizes a revolutionary, built-in, two-stage capacity design to provide more precise temperature control, lower humidity, and greater energy efficiency in comparison to single-stage compressors. By operating in part-load capacity, systems with the two-stage compressor have longer run times, thereby avoiding the constant on-off cycle, reducing humidity, maintaining more precise temperature control, all while saving energy.

When combined with modulation control, the Copeland Scroll two-stage compressor enables enhanced comfort in a partial replacement scenario, whereas traditionally a full system replacement was required to enable this level of comfort.



See how Copeland Scroll two-stage works

SENSI™ TOUCH WI-FI THERMOSTAT

The new Sensi™ Touch Wi-Fi Thermostat builds on the legacy of Emerson’s signature Sensi brand, which was voted as the best smart thermostat by [Reviewed.com](https://www.reviewed.com) after extensive testing. The reviewers praised its “easy setup, intuitive controls and voice-controlled personal assistant capability make it the best choice, regardless of your experience with smart home products.”

It combines proven smart home technology with a vibrant color touchscreen display, intuitive interface and mobile app and a sleek, minimalist appearance that will be at home in any modern living space. In addition to innovative features like smart home compatibility, the Sensi Touch Wi-Fi Thermostat includes value features for homeowners like smart alerts when extreme temperature or humidity changes are detected, and flexibility to select options and programs that fit individual lifestyles.

For commercial applications, the Sensi multiple thermostat management software expands the benefit beyond traditional residential homeowners to commercial applications. Business owners and facilities managers can control multiple thermostats at multiple locations, monitoring and adjusting the devices from one convenient place.



SUPERVISORY CONTROLS

The Supervisory Control System manages refrigeration, HVAC, lighting and other critical equipment systems while collecting data on important performance indicators – including refrigerated case temperatures, energy usage, and HVAC space temperatures – allowing store managers the ability to quickly respond to issues that may impact the customer experience and food quality.

The Supervisory Controls are optimized for Emerson ProAct™ enterprise management software and ProAct™ Alerts mobile app. These supervisory controls collect and analyze data, which ProAct Services then develop into a report to help facility and enterprise managers to monitor, manage and resolve local alerts.

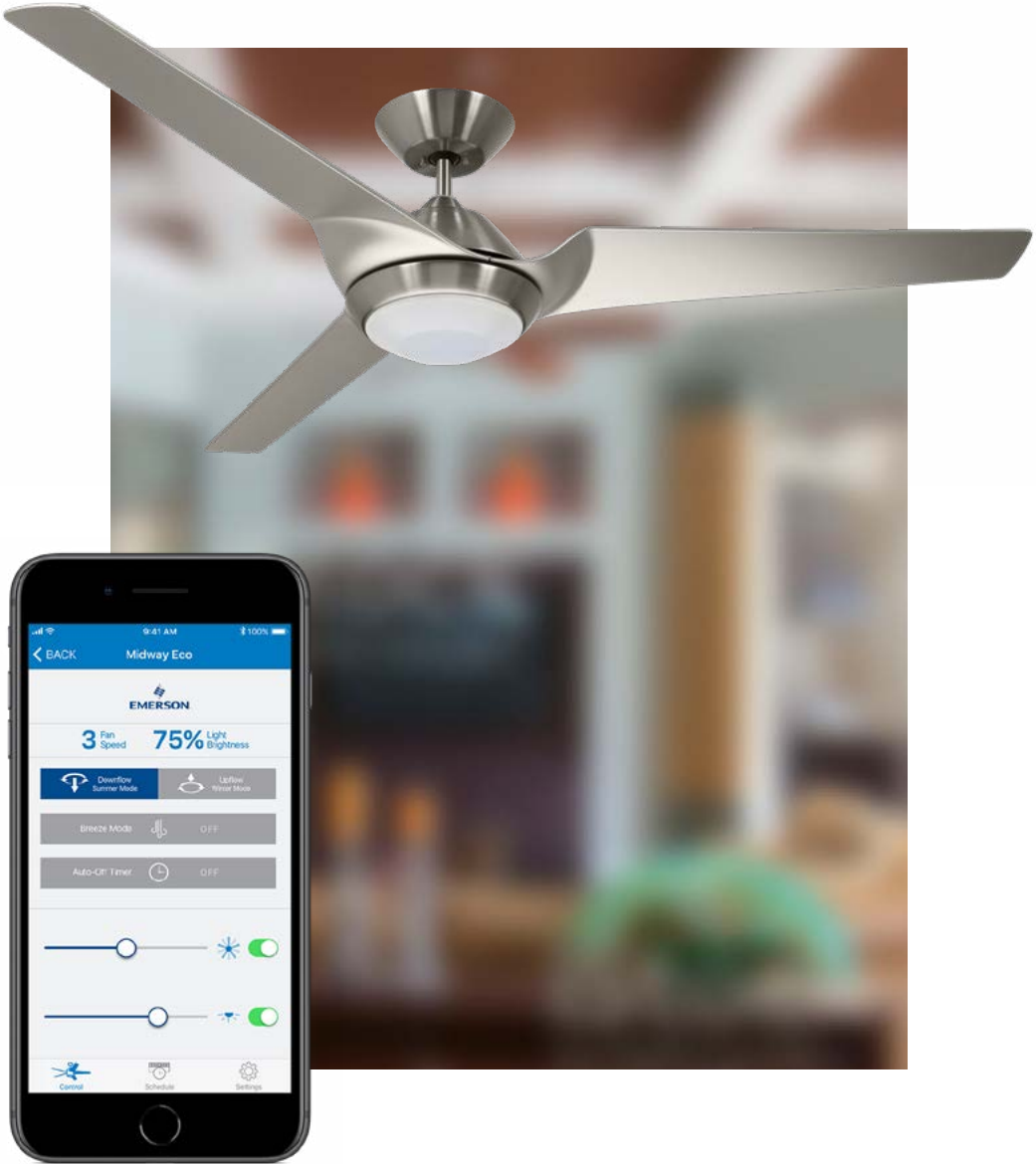
The simple, intuitive interface makes it easy to determine current conditions using desktop or mobile devices, granting facility managers control over their stores from virtually anywhere with an internet or cellular connection.



EMERSON VOICE ACTIVATED WI-FI FAN

The new 60 inch Sweep Eco Wi-Fi fan from Emerson, offers consumers the ability to control their home comfort from anywhere in the world. It can be operated via voice control through Amazon Alexa or the Emerson app.

Through voice activation, consumers can control fan functions, including convenient speed and light operation, scheduling and grouping fan activity, running in reverse and simulating a natural breeze. In addition to the Sweep Eco’s modern features and sleek architectural form, it’s EcoMotor uses up to 75 percent less energy compared to other ceiling fan motors, making this fan ideal for the smart home or eco-conscious homeowner.



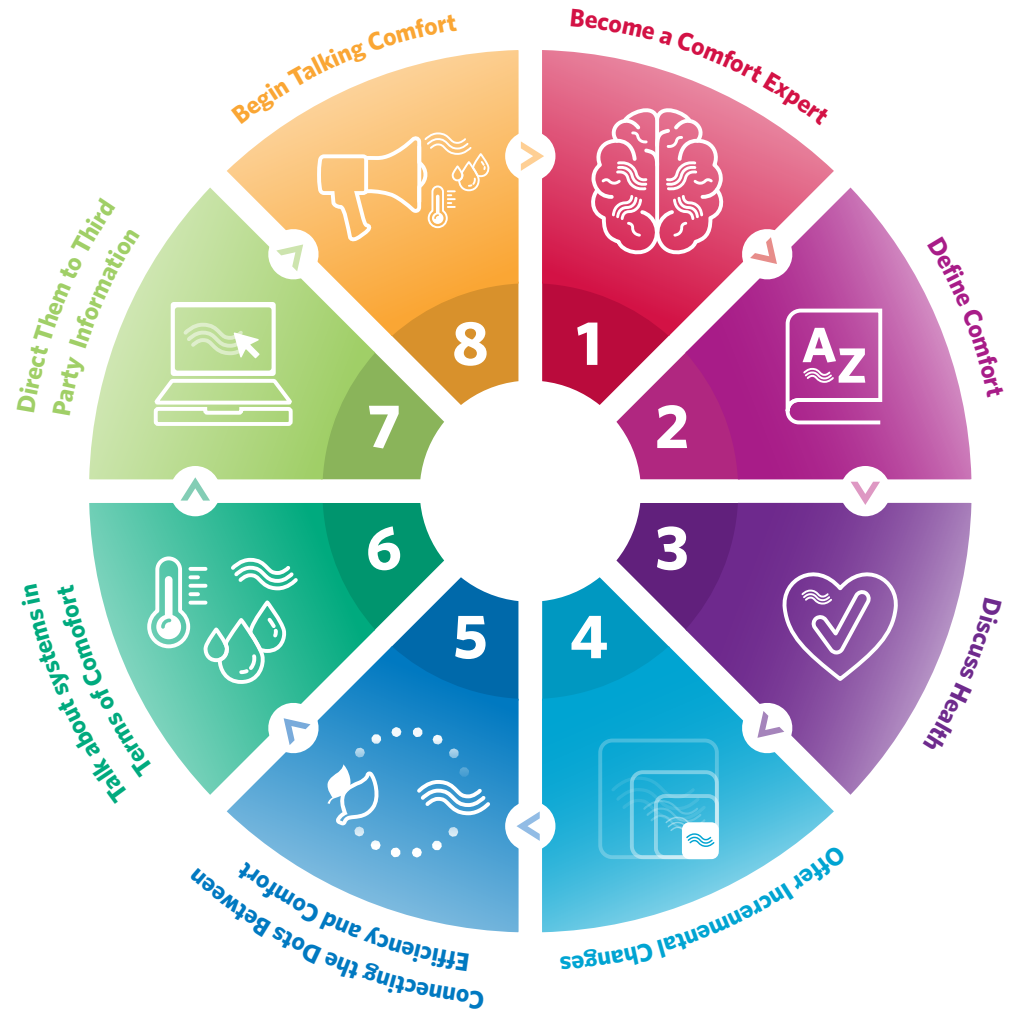


CHAPTER 6

Answering the call
for comfort

EIGHT TIPS TO TALK COMFORT WITH YOUR CUSTOMERS

So now you're ready to have that comfort conversation with your customer. But, where do you start? Regardless of whether you're a contractor, builder or consulting-specifying engineer and you're talking with a customer about upgrading their system, building a new home or designing a new commercial building or space, the following tips can help you bring the concept of comfort to the forefront of the conversation.





1 Become a comfort expert

Of course it's not possible to know everything. The key is knowing enough so you can easily inject comfort into HVAC conversations and educate your customers on the role HVAC plays in comfort and livability. The goal is for your customers to see you as their comfort expert. The information in this e-book provides a good foundation to build upon.



2 Define comfort

Sometimes the easiest way to define something is by describing what it isn't. Ask your customers if they have temperature swings on humid days between cycles, cold spots in the home or office, trouble sleeping in the summer, or complaints from employees about office temperatures. By getting them to talk about issues they have, it's easier to define what comfort is and what it means to them.



3 Discuss health

While health can be a delicate topic, it is an important, and personal, one when it comes to comfort. For most customers, it is probably enough just to help them understand that the comfort level of a home or office building that could either make occupants sick or worsen a pre-existing condition. Talking about health issues provides an easy transition to introducing the concept of indoor air quality.





4 Offer incremental changes

This one is a bit of a psychological approach. Big changes or purchases are often perceived as expensive, intimidating or overwhelming, by default. Smaller, incremental changes, which deliver on low-hanging fruit or provide a manageable road map for achieving a larger goal, can be viewed as more approachable, doable and affordable.



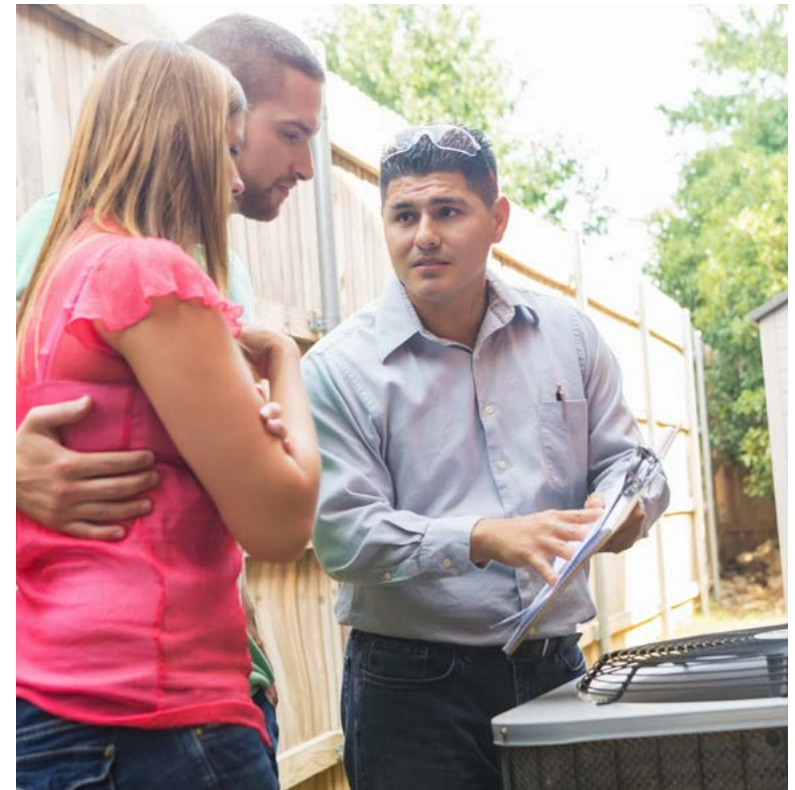
5 Connect the dots between efficiency and comfort

Explain that you don't need to choose between energy efficiency and comfort. A balanced approach is possible. Many of the advanced systems and technology that deliver energy savings also provide better comfort and indoor air quality. Temperature consistency, energy efficiency and humidity control are all aspects of systems that deliver higher comfort.



6 Talk about systems in terms of comfort

When explaining the differences between systems, for example, focus on the comfort factors – humidity control, consistent cooling, better air circulation – rather than just cost or machine performance differences. A customer might not care about what 'variable speed' means, but they will want to hear they won't sweat or freeze at night.





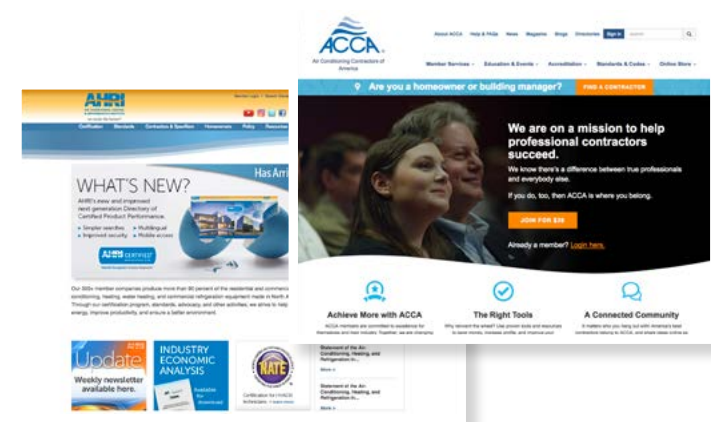
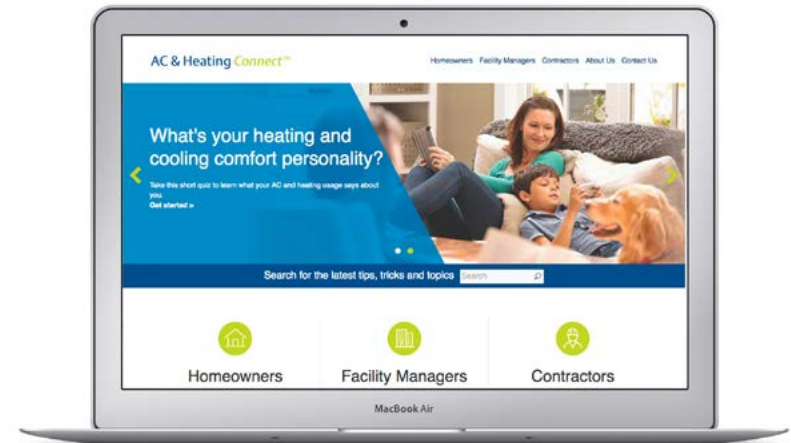
7 Direct them to third party information

There are several good online sources of unbiased information to which you can direct customers. [AC & Heating Connect](#) is a good resource for homeowner, contractors and commercial end-users. OEM and association sites, like ACCA and AHRI are other great resources as well.



8 Begin talking comfort

There's no better time than now to have the discussion. Think about the next engagement you will have with your customers and decide the best way to introduce the concept of comfort with them.



OTHER RESOURCES AND TOOLS

HVAC On Air Podcast Series

HVAC On Air is a podcast series covering a variety of topics around cooling and heating. The series includes key industry trends, new technologies, and information for homeowners to consider when repairing or installing a new HVAC system.



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eSaver Mobile App

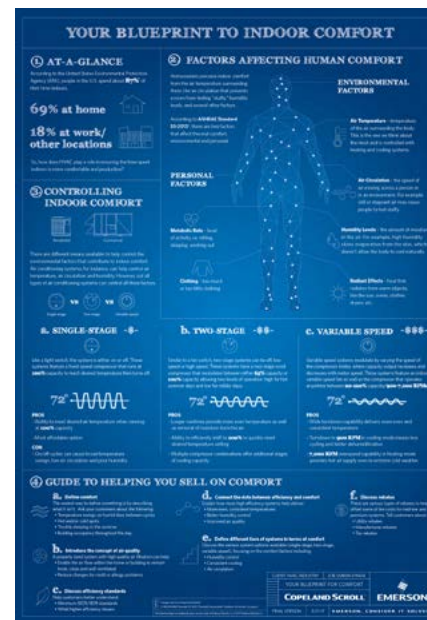
HVAC system conversion and replacement options – and save money – with instant access to on-the-go calculations.



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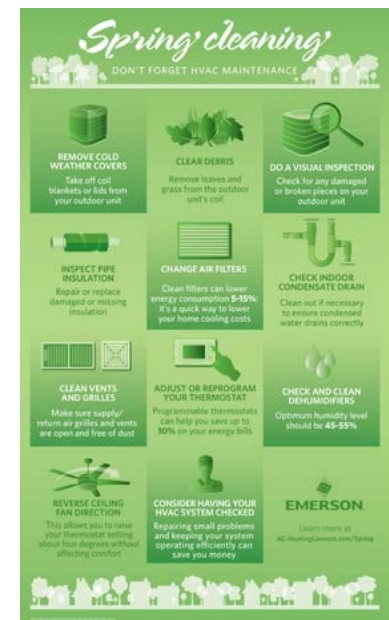
Infographics

We've designed a series of visual infographics to support you and your customers when it comes to installing, repairing and maintaining HVAC systems.



Blueprint to Comfort

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Spring Maintenance Tips

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