MULTIFAMILY

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Message From the Publisher

Welcome, dear reader, to our issue focused on energy transformations. Here we find ourselves just out of the starting gate of 2023, and I am so excited to see what we can accomplish together before the end of the decade. Many countries and companies have set goals to reduce emissions "fill in the blank" percent by 2030. For those of us who haven't yet, there is still time to jump on the bandwagon.

Most of us who work in multi-family real estate have stumbled across this fun-tastic industry by mistake (or perhaps you'd call it luck?). You see, I don't know many of us who went around in third grade telling our parents and teachers and friends, "I want to work in the apartment industry when I grow up!"

That said, I have loved buildings for as long as I can remember. Maybe you're the same. For me, it began with a fascination for sketching rough floorplans of every building that I spent much time in. My parent's house, hotels, etc. Now that I mention it, I suppose it was focused on residential buildings – places that people lived and slept within. In high school, I aced my drafting classes and started making plans with a likeminded friend named McLain to open a McArchitecture firm when we grew up. (In retrospect, we probably would have needed to change that name before any banks would loan us any startup capital.) Once I started college, I ended up dropping my architecture major after a semester or two realizing that degree had a built-in extra year standing in between me and graduation. Then, after an exploratory semester as a civil engineering major, I steered away from the built environment for a while. But as Joey Tribbiani (Matt LeBlanc) says in Friends, "Just when I thought I was out, they pull me back in!" Ok, fine. You classic movie buffs who just yelled at me are right. Joey probably borrowed this line from Michael Corleone (Al Pacino) in The Godfather III.

Anyway, the point is about buildings, and how GREAT it is to work in this industry. I stumbled into multi-family while still in grad school, and now it is almost 25 years later. But to take a little poetic license with another movie quote: "with greatness comes great responsibility."

I was recently shocked while reading about us in a study published on US EPA's website. Their study breaks down the share of national emissions by economic sectors: Transportation, Industrial, Agriculture, and Buildings. Of those four sectors, where would you guess Buildings ranks?

First place. That's right: we're the biggest! But this is one of those rare cases where bigger is not better because it means our beloved buildings are driving the most emissions in the United States at 31% of the total. Rounding out the list is Industrial at 30%, Transportation at 27%, and Agriculture at 11%. So, for those of us who are working toward being more sustainable, we've got a big job ahead of us.

Like me, you may have had a strong emotional response last year watching news reports of Russia's invasion of Ukraine. Eventually the feelings we had for what was happening abroad morphed into fear for our own family finances when we realized that conflict set off a cascade of price hikes. It disrupted the global flow of natural gas driving up rates. Speaking of economics, one of its basic principles is supply and demand. In this issue, Chris Laughman will help us connect the dots to how the demand side of energy economics impacts our properties. Mary Nitschke will share with us about the transition from gas to electric as part of the strategy to get a property to Net Zero. She will also demystify what Net Zero really means – or at least what it is supposed to mean! And one of Lori Hanson's multiple articles will further unpack one piece of the electrification topic that Mary will overview for us. But wait, that's not all! In his guest editor column, Tim Haddon will get us oriented and ready for even more articles in this jam-packed issue on transformation.

There's much to do to transform building energy use, but like I said, this is the greatest industry. If you've been here a while, you know what I'm talking about. If you're new to the industry, welcome to where the biggest action is at! So, let's pour a cup of coffee or tea, settle in to learn from these experts, and then work together to get 'er done!

Kent McDonald
Publisher
LEED Green Associate, certified by US Green Building Council
Climate Change Professional (CC-P), certified by the Association of Climate Change Officers

Message From the Guest Editor

Walt Disney famously said "Disneyland will never be completed. It will continue to grow as long as there is imagination left in the world." I feel the same about energy—which dovetails perfectly into the theme of this issue, Energy Transformation.

We've seen a lot of energy transformation over the years based on various resources such as wood, oil, coal, natural gas, nuclear and more recently solar and wind. Thankfully we're always driving towards cleaner and more efficient ways to generate and use energy. Multifamily operations are quickly adapting to the latest trends. This issue will explore several ways to make your multifamily property operation more energy efficient and give you a 'heads' up' to some emerging trends.

We start off with Chris Laughman's article on Demand Response. When the electrical grid approaches capacity, Demand Response programs look to lessen usage. Next, Peter Chan's Office ESG article explores ideas to conserve resources and lower the office footprint. Many of these ideas can be adapted for multifamily. Lori Hanson explores a couple areas such as resident preferences and does a deep dive into induction cooking and Mary Nitschke explores Net Zero trends. Finally, we have a heartfelt tribute to one of the energy management leaders in multifamily, Vicki Parrish.

I'm proud to be part of an industry that is adapting and, in many ways, leading energy transformation. We've come a long way from installing low flow toilets and energy efficient fixtures. While those items are still important, I'm excited for the next generation of energy saving technologies. I'm inspired by the song lyrics in Disney's classic attraction Carousel of Progress, "There's a great, big, beautiful tomorrow, and tomorrow's just a dream away." As energy leaders, it's our job to dream big and make each tomorrow more 'beautifully' energy efficient.

Tim Haddon
Guest Editor

Demand Response is Coming Your Way

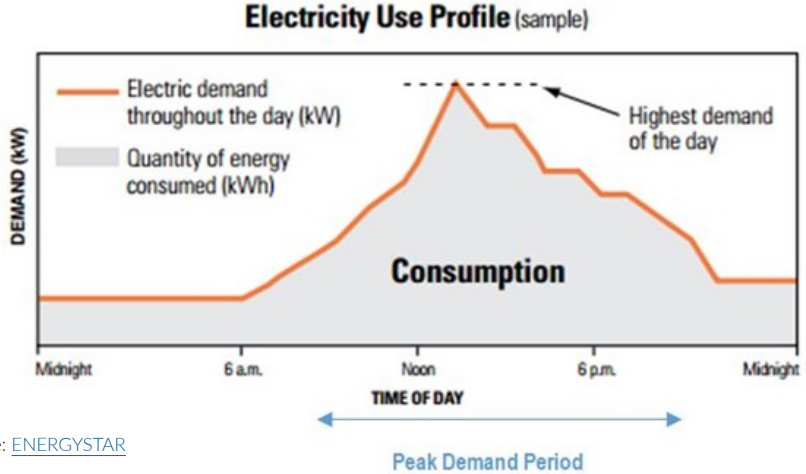
If you haven't received your letter yet, it is probably on its way... Demand Response (DR) is coming to residential energy users. If you have commercial properties as well, you likely have worked with DR, but it is quickly moving to residential, even single family residential.

So, what is Demand?

On your electrical bill, there is a monthly fee called the demand charge, and this is the cost of maintaining the electrical utility providers infrastructure to make sure you have electrical power for your highest point of use. This charge is based on the peak energy use that is measured at a given point in time, on a given day in the billing period.

Sometimes you may also see this called Peak Demand, or On-Peak Demand Load, among other terms.

(See this link for other names for Demand: https://energystar-mesa.force.com/PortfolioManager/s/article/I-don-t-see-anything-on-my-bill-that-says-Demand-could-it-be-called-something-else-1600088546601)



Source: ENERGYSTAR

Once we understand what Demand is, you can imagine, a Demand "Response" is the electrical utility provider's program to incentivize its customer to reduce Demand. These programs vary, but often provide some incentive that is provided to the customer in return for the customer reducing their electrical usage during a "demand event." An example of this might be found through your smart thermostat. In this program, if you opt in, you provide the electrical utility provider permission to reduce your HVAC consumption for a period of time on a particular day in which they expect high electrical consumption. Through the smart thermostat, they can pre-cool or pre-heat the space covered by the thermostat and then turn the conditioning to a setting that will be minimally required during the actual hours of the demand event. In return, you receive a credit against your future electrical expense, or even cash.

So why is this important?

There are really two issues addressed by a DR program. The first is the ability of the electrical utility provider to provide a consistent and reliable power. When you turn on the light switch, you expect it to turn on. However, if the demand exceeds the capacity of the grid or the supply of the provider – you may experience a brownout, or even blackout. As a last resort, utilities may have to preemptively reduce power in certain parts of the grid to prevent full grid power loss; these are called rolling brownouts or rolling blackouts.

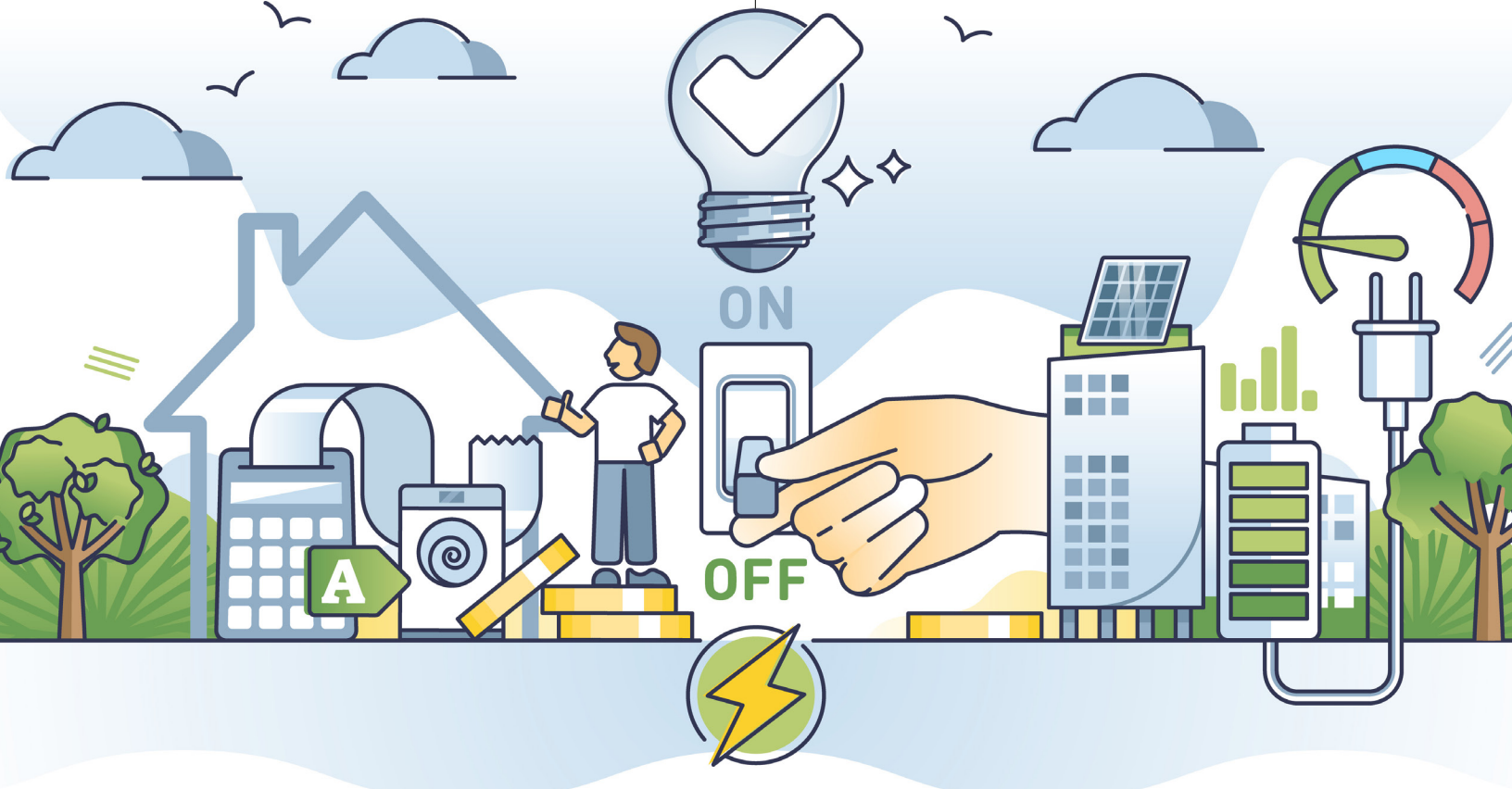
The other issue is more of an environmental impact issue. When electrical utility companies meet their supply capacity, they have a backup power resource they turn to called Peaker plants (Peaking power plants, or sometimes just called "Peakers"). While these plants are not used regularly, when used they often account for a large percentage of the greenhouse gas emissions of the power system. For comparison's sake, even compared to a natural gas power generation plant, the Peaker plant often uses up to 50% more natural gas for the same amount of power production. Not only do they tend to use carbon intensity power sources, but they are expensive, generating some of the most expensive electricity on the grid. Billions are spent every year, paying standby fees just in case they are needed.

So, what are we doing about it?

Demand Response Program providers are increasingly emerging in markets that launch DR programs. These vendors provide solutions ranging from communication tools, such as light switches that can change colors during a DR Event, to active engagement, managing maintenance and other energy intensive activities during Demand periods, and leveraging battery technology and even solar to offset grid-supplied power during Demand periods.

The key to this is knowing the amount of energy you are using, which means collecting and measuring that energy. Through analysis of the consumption of kW's, we can identify when high usage periods exist and then evaluate what mitigation measures can be implemented to reduce consumption during those time periods. It all starts with awareness and data.

By Chris Laughman



How Do We Get to Net Zero?

I have a bumper sticker that says "Energy Is Sexy" that I used to decorate my office door with. One day the VP of Human Resources came by and looked at my sticker. I held my breath, waiting for the discussion of what was appropriate in the workplace. She simply sighed, looked me square in the eye and said, "Gas Isn't." She gets me.

I feel I have been fighting natural gas for about a decade. Before you giggle and dive into a digestive track, let's talk about "why" we should all be fighting against gas. When we talk about Net Zero, and even Net Zero for retrofit (which can be done), we have alternatives when it comes to heating our buildings, hot water and cooking. I should step back a tiny bit to quickly define "Net Zero." In a nutshell, a Net Zero building generates as much energy as it consumes on an annual basis. The path to Net Zero is electrification, which is just a fancy pants term for putting in electric systems and not gas.

So how do we get to Net Zero? As with everything in our industry, it is much easier to contemplate when looking at new construction. I don't think we even need to dive into "how" you would build Net Zero. It has been done. A lot. Sure, with new construction, we need to include design for onsite generation and dedicate rooftop space, we can purchase electric hot water heaters, and in some markets look at heat pumps instead of gas heat. However how do we approach net zero if we make the determination to retrofit for it?

Before you cry "Impossible!" It is not impossible; it just takes math and innovation. For retrofit, the first thing you will need to do is take an inventory of the systems on your property that potentially need natural gas fuel: Hot water, Heat, and cooking. (I personally have never seen a property run their lights, elevators and mechanical ventilation on any fuel other than during a power outage where a generator was required.)

Let's start with Heat. In many cases the conversion to a heat pump system is the most accessible. The Department of Energy released a case study on heat pumps for Electrification. Mini split heat pumps for multifamily units are proven technology and a quick internet search will provide countless articles, case studies and videos regarding their application. I think it is important, before you embark on a heat pumpapoolza that you review the content on what type of heat pump you need in what climate. Not all units are created equal. Additionally, assess whether your property is located in a microclimate—as your temperatures might not be reflective of the big map of the United States. Lastly, look to your electrician to perform a load study. For the individual apartment unit, although you more than likely will have capacity it is good to check before you start; however, if you are looking at a large commercial system for your club house, it is imperative to know in advance before you blow out a panel. I know you are thinking that the onsite generation should be sufficient power. Remember, you still need heat at night and want to ensure you don't end up in a bad spot. Net Zero is about over a 12-month cycle of generation and consumption so you should check your system.

A quick focus on hot water. If your apartment units have individual tanks for hot water, you will need to look at the electricity panel capacity for the units, just like a mini split heat pump. However, if you are looking at a large domestic system that might be providing hot water to all the units in your building, I strongly encourage looking at Solar. Solar paneling for hot water tends to require fewer panels and the water in the tank becomes your storage. Panels can generate and the tank stores the hot water until ready to use. Additionally, there are rebate programs out there for solar conversion; it is good to have all your options for free money open.

The most difficult hurdle of an Electrification retrofit is if the community

has gas stoves. Although the process of switching to an electric appliance is somewhat similar to the process of switching out a gas hot water heater (does the apartment unit panel have capacity), there is an emotional hurdle to overcome with this fixture. There is a prevailing notion that gas is better for cooking. I have been rallying against gas stoves for about a decade now. Not just with the focus of Net Zero and Electrification, but for health purposes as well. Gas flame should be blue. If it isn't, then the fixture is emitting carbon monoxide, which has been linked to both health issues and deaths. You may be thinking, "Well, my apartment units are all equipped with carbon monoxide sensors, so my residents are "safe." Sadly, this is a misconception. CO sensors are set to sound an alarm when the carbon monoxide levels exceed 150ppm, yet with a low CO level (50 ppm), it may take up to eight hours for the alarm to go off. Low doses over long periods can be just as dangerous as sudden carbon monoxide exposure in ultra-high doses. (Some residents will use their stoves and ovens for a heat source, so prolonged exposure is a real possibility.) Yet we cling to gas for cooking because it is "better." I recall a debate that I had with a developer in 2015. "Mary, we have to put in gas stoves because it is a value add in class A properties. Think of putting gas stoves in as keeping up with the Joneses." I swiftly replied, "Why do you want to just keep up with the Joneses. If you installed convection (electric) you could be the Joneses." Sadly, I lost that battle. Gas stoves were part of the development specifications on that project.

Not everything in nature is healthy; look at arsenic. The next shift in our construction codes could be a ban on gas stoves. Yet currently we cling to the notion, "a fancy kitchen has a gas stove." Recently, a friend of mine confided that they had thought that gas was the be all end all of cooking until they got a convention cook top which changed their perspective on the need for gas to have a great kitchen. Three years we had discussed gas before perception changed with that individual. I had no sway; it was the experience of convection that created their conclusion. That is one individual. Imagine how long it will take an entire market to shift. It will take a change in code, and collectively and sadly as a society we will resist.

The hurdle of Net Zero isn't construction. It can be done. The hurdle of Net Zero, from my perspective will be in getting the market to shift its perception that gas is Good. My VP of Human Resources was right. Gas is not Sexy.

By Mary Nitschke

Induction Cooking - Trendy or Here to Stay?

If you've heard of induction cooking, you may be wondering if it is actually relevant within the apartment industry, or just another buzzword or fad.

While some may think induction and electric cooktops are similar, there is actually a very big difference with induction versus electric cooking, and it comes down to efficiency. An induction cooktop offers 40% faster temperature response than electric cooking and is more energy-efficient than electric cooktops.

Induction cooktops and ranges can boil water in about half the time of a conventional cooktop. This is because they use induction technology to generate energy from an electromagnetic field below the glass cooktop surface. The energy is then transferred by current directly to magnetic cookware, causing it to heat up (basically cooking via a magnetic field). This technology is isolated to the cooktop – the ovens in induction ranges bake and broil in the same way traditional electric ranges do.

Pros:

- **Energy efficiency** – 3 times more efficient than gas rages; roughly 10% more efficient than electric ranges; heat is not lost in the air during the transferring process or while residents wait for their burner to heat up
- **Faster cooking times**
- **Better cooking** – foods will cook more evenly and precisely
- **Specs** – Design and size are similar to traditional glass cooktop electric ranges. Additionally, swapping from electric to induction is an easy process (same outlet is used).
- **Incentive / rebate potential** – Possible financial incentives to purchase, created by the Inflation Reduction Act
- **Safety** – The cooktop itself does not heat up – the pot / cookware heats up while the cooktop remains cool (and safe to touch); nearby objects such as dish towels or papers will not catch on fire – induction only heats items with iron particles in them
- **Easy to clean** – Similar to cleaning the glass cooktop of an electric range

Cons:

- **Cost** – Although prices continue to drop for induction ranges, they are still typically more costly than traditional electric ranges
- **The "right" cookware is required** – stainless steel and cast-iron pots and pans will work, but aluminum, copper, and glass will not (basically, if a magnet sticks to the pot, it will work on an induction cooktop); residents may need to purchase additional cookware that is "induction compatible" or an adapter disc which will allow them to use noncompatible cookware
- **Learning curve** – This is a new technology and residents are likely not familiar with how to operate induction ranges (the magnetic connection must be maintained while cooking, so no moving pots around constantly, risk of overcooking food due to faster cooking, induction ranges make a buzzing sound that may surprise residents)
- **Damage potential** – The surfaces of induction ranges can scratch easily if the user is not careful; sharp tools, damaged or scratched pots, and abrasive cleaning products should be avoided. And as with electric glass cooktops, there is the potential that a resident could break the glass surface.

Could this be right for the apartment industry?

While an induction cooktop will boil water and cook food faster on the cooktop, the faster cooking times are probably not life changing - but certainly can help out on a busy evening when cooking dinner is just one of several things a resident has on their plate. Additionally, the safety features and energy efficiency they provide are intriguing and would be very useful to our industry.

Due to their current price point, induction ranges are likely not going be a common choice for multifamily at this time, but they would make a great selling feature for a luxury or sustainability-focused development. As costs continue to come down, induction cooking could potentially make its way into the kitchens of general multifamily buildings.

By Lori Hanson

Resident Trends – Apartment Design and Amenities

We can all agree that we are living in a very different world today than we were just 3 or 4 years ago. So many things have changed in our daily lives recently, and the ways we work and live are no exception. We have new priorities and focuses, as well as new preferences.

The rapid changes and challenges we have all recently endured have impacted what residents want in their apartment homes and communities. Things that used to matter 3 or 4 years ago, may no longer be important, and things that residents didn't even think about previously, have now become "must haves" during their apartment search.

For example, apartment home features that residents now consider very high priorities include additional soundproofing, balconies, hardwood style floors, premium washers and dryers, and stainless-steel appliances. Clearly, this list of priority features reflects the new norm that residents are spending more time at home - many being there all day as they work from home. A quiet place to work is important, as is a place to step out and enjoy some outdoor living.

Residents are willing to pay premiums for apartment features that include floor to ceiling windows, secured community access, rooftop amenity space, additional storage space, and reserved parking. And in certain markets, residents are willing to increase their monthly rent payment for outdoor recreational areas, fitness classes, car charging stations, and valet parking.

Resident wish lists also include pools, package lockers, community Wi-Fi, and community dog parks.

According to CID Design Group, today's consumer segments include renters who are "eco-conscious," "playful," and "amenity-driven."

Eco-conscious consumers place a high priority on community features such as recycling programs and sustainability / green certifications. They enjoy community gardens and features associated with a "well building."

Playful consumers are looking for amenities that will allow them to let loose and be carefree. They look for things like lazy rivers, outdoor art galleries, outdoor concert areas, bike sharing, and yard games.

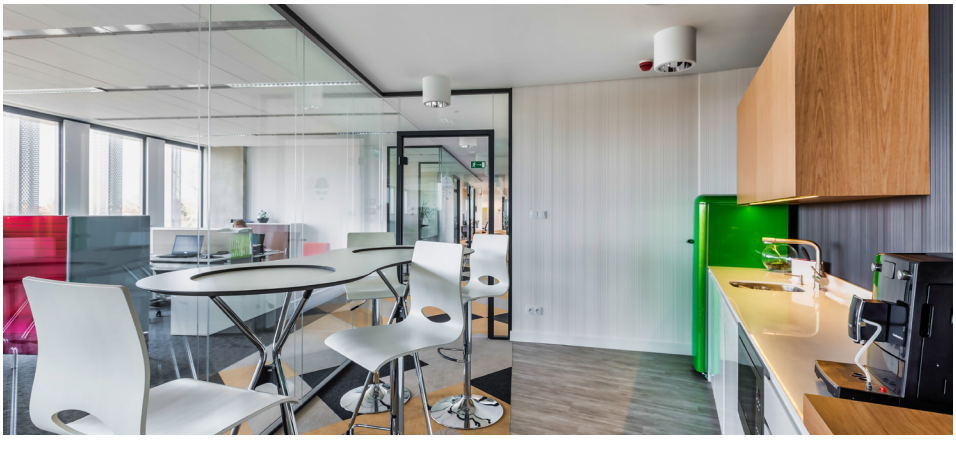
Amenity-driven consumers seek the "latest and greatest," being intrigued with things like on-site convenience stores and vending, multifunctional spaces, smart tech, and stand out design.

Indeed, our idea of home has changed in the post-COVID world. Residents are now seeking connection with others, outdoor space, and opportunities to have fun and enjoy life. When they are at home, either to relax or to work, they want to feel comfortable, connected with nature, and surrounded by conveniences to enjoy the life they are living.

By Lori Hanson

ESG: Shared Office

While the working remote trend is still going strong, many of us are going back to the office and some of us never left. The office working environment gives us an opportunity to explore ESG practices and stimulate ideas that may transfer to multifamily properties. Here are some suggestions for office ESG practices:



Shared offices/cubes:

A big change that we've seen/implemented (especially in the past 2 years) has been shared offices for personnel who are mostly working from home or traveling.

At our offices, many personnel including Vice Presidents, Managers, and others do not have permanently assigned offices.

They are often working from home, or temporarily officing at one of our properties.

Fun fact: if all of our team members stopped working from home, and came back to our offices at the same time, there would not be sufficient seating for everyone!

Removal of single-use water bottles (except for office guests):

We include in our New Hire and Office Orientation training that Employees are encouraged to bring their own mugs/reusable water bottles.

To encourage/reinforce this for our New Hires, we started including a Fairfield-branded vacuum water bottle in our New Hire swag package.

In-office recycling:

Each office, cube, conference room, copier/scanner room, and mail room is equipped with both trash and recycling receptacles.

Simply having the containers available at-hand, provides a greater opportunity for busy professionals to recycle without turning it into an expedition to take the recyclable materials to another location.

We also have a Battery Recycling Receptacle (just one for the building).

Sustainable purchasing requirements/guidelines:

Policies governing the purchase of environmentally-safe products on-site and at our Corporate Offices provides a framework to at least discuss/evaluate products that are less harmful to the environment and our teams.

Utensils provided in our Corporate kitchens are now made from bio-degradable materials.

We use wooden/bamboo coffee stirrers, instead of the plastic ones. We still provide recyclable single-use paper/plastic cups for those days when people leave their cups/bottles at home.

We also purchase recycled paper for our copiers and printers, instead of "first run" paper.

Depending on whether you own or lease your office buildings, motion sensors/occupancy sensors in the common areas:

In California, this is more-or-less standard practice in retrofits, and is mandated by legislative requirements for New Construction in many Cities/States.

If you lease your building, there may be limited direct benefit to the Landlord, especially if the electric is billed to the Tenant in a NNN Lease.

However, if you own your building, Motion Sensors and Occupancy Sensors will result in direct and significant Operational Savings. These savings only get magnified as the cost of electricity continues to rise.

If you own your office building:

You have an opportunity to take efficiency one-step further with Rooftop Solar.

Unlike a home, most offices use very little power after the sun goes down.

Most of the power demands occur during the day while the sun is shining... and that's when Solar Generation is the most beneficial to a building.

Internet/phone benefit for employees:

Though not technically in the office, as employees start working from home, consider providing a Phone/Internet stipend, since they are now using their personal internet/phones for business use.

This could be accomplished as a simple transfer of expenses, as the bandwidth needs at the office are now diminished, with far fewer users IN the office.

By Peter Chan

Vicki Parrish – A Lasting Legacy

In August of 2022, our friend and colleague, Vicki Parrish, passed away. Vicki was an influential leader in our industry, specializing in utility billing management.

Vicki attended Texas Tech University where she earned a bachelor's degree in Biological Sciences. Since the 1980s, Vicki helped shape our industry and worked at both utility billing and property management companies. She held significant tenure with Riverstone Residential Group and Greystar.

Vicki joined Greystar as part of the Riverstone acquisition in 2013 and successfully led the Energy Services segment there until she passed away. Vicki was a long-standing member of the Utility Management Advisory (UMA) and a subscriber to the Journal of Utility Management (JOUM).

She was a leading and respected subject matter expert in her field and will be sorely missed.

Vicki's memory and legacy will live on in our industry.

By Lori Hanson

In remembrance of Vicki, her friends and family have chosen to have trees planted in Vicki's name in Lincoln National Forest, New Mexico via https://www.alivingtribute.org/

Fond memories and expressions of sympathy may be shared at https://www.dignitymemorial.com/obituaries/leander-tx/vicki-parrish-10897566 (click on "Add a Memory").

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