Building Safety is … Personal

## Week 1 – Building Safety Starts at Home (May 1st – 7th)

Welcome to Week 1 of Building Safety Month 2023! As part of our “Building Safety is Personal” theme, this week we’re highlighting “Building Safety Starts At Home” and how building safety impacts out everyday life as family members, friends and individuals at home. This will show you everything from fire safety tips and home maintenance best practices, to how to be more sustainable to ensure a cleaner and greener tomorrow. Safety Tips and Information is provided by the International Code Council. Go to www.buildingsafetymonth.org for more awareness about building safety. Join the Building Safety Month conversation – tag the International Code Council on social media and use #BuildingSafety365 to help spread the word!

# Fire Safety At Home

Modern homes and buildings incorporate the latest building codes and are designed to minimize the possibility and effects of fire and other risks. While building safety professionals help maintain this system, there are things we can do at home to stay safe and help reduce the risk of fire. If a fire does break out, it's also critical to know how to make a safe exit – it takes less than 30 seconds for a small flame to burn completely out of control and turn into a major fire.

Here is a few fire safety tips, and be sure to download and review the complete guide:

- Put a smoke alarm on every level of your home, outside each sleeping area and inside every bedroom.
- Test each smoke alarm regularly. Keep batteries fresh by replacing them annually.
- Make an escape plan so everyone knows how to get out fast. Pick a meeting place outside the home where everyone will meet.
- Portable heaters need their space. Keep anything that can burn at least three feet away.
- Keep all items that can burn away from your home, clean leaves from your gutters and clear dead leaves and branches from shrubs and trees.

**Fire Safety Tips**

*IMPORTANT TIPS – To Remember for Fire Safety And Awareness*

- Put a smoke alarm on every level of your home and outside each sleeping area. Put a smoke alarm inside every bedroom.

- Make sure your smoke alarms work. Test your smoke alarms. When you push the test button, you should hear a loud noise. If you don't hear the noise, you need a new battery or a new alarm.

- Make sure the smoke alarm always has a good battery. Put a new battery in the alarm every year.

- Smoke alarms with long-life batteries will work for up to 10 years. You do not change the batter.

- Smoke alarms do not last forever. Replace every 10 years. Newer smoke alarms provide the 10 year date.

- Tell your family what to do if they hear the smoke alarm. Make an escape plan so everyone knows how to get out fast. Pick a meeting place outside the home where everyone will meet. Some children and older adults cannot hear the smoke alarm when they are sleeping. Make a plan for how to wake them up. Practice your escape plan with everyone in your family two times each year.

- Install home fire sprinklers in your home. Home fire sprinklers and working smoke alarms greatly increase your chance of surviving a fire. Sprinklers are affordable and they can increase your property value and lower your insurance rates.

- Portable heaters should be avoided but where used they need their space. Keep anything that can burn at least three feet away.

If you live in an area where homes are located in or close to forests or vegetation areas, you should think about the following safety tips:

- Install 1/8 inch or smaller, noncombustible corrosion-resistant mesh screening that cannot burn on attic/soffit vents and around wood decks to keep out embers. Install spark arrestors on fire place chimneys or wood stove vents.

- Keep all items that can burn away from your home. Clean leaves from your gutters. Clear dead leaves and branches from shrubs and trees.

## Alarm Safety Tips

*The Sound of Safety*

What is the most important thing to remember when installing a smoke alarm or carbon monoxide alarm?

Location, location, location!

### *Smoke Alarm Safety*

- Install at least one smoke alarm in every bedroom, outside each sleeping room area and on each level of a multi-level building.
- Test each smoke alarm regularly.
- Keep batteries fresh by replacing them annually.
- Check the manufacturer date on your smoke alarm. Replace if it is over 10 years old.

*Smoke alarms can't help you unless they are functional and you can hear them. Building Safety codes require smoke alarms. Contact the Building and Fire Department for more information.*

### *Carbon Monoxide (CO) Alarm Safety*

- Install a CO alarm in the hallway outside of each sleeping room area and in bedrooms containing fuel burning appliances or fireplaces.
- Test each CO alarm regularly in accordance with the manufacturer's instructions.
- Permanently wired or plug-in CO alarms should have a battery backup. Keep batteries fresh by replacing them annually.

*CO alarms can't help you unless they are functional and you can hear them. Building safety codes require CO alarms in all dwelling units that contain a fuel-fired appliance and dwelling units that have an attached garage. Contact the Building Department for more information.*

## Exit Safety Tips

### *Make a Safe Exit*

During a home emergency, such as a fire, it's important that all occupants are able to get out – and emergency personnel are able to get in as quickly and easily as possible.

*Safe Exit Paths and Passages*

- Keep hallways clear of obstructions.
- Do not block or obstruct emergency escape windows and exit doors.
- Make sure all family members know how to unlock and open windows and doors.
- Be sure window security bars release from the inside in case of emergency.
- Develop and practice a fire escape plan.

*According to the U.S. Fire Administration, it takes less than 30 seconds for a small flame to burn completely out of control and turn into a major fire. Within minutes, a house can fill with thick, black smoke and become engulfed in flames. Building safety codes designate minimum window and hallway sizes to allow occupants to get out in case of emergency, and provide access to first responders to get in. Contact the Building and Fire Department for more information.*

# Building Safety at Home

Regardless if you own your home or you're renting, keeping your home maintained is important to ensure you're living in a safe environment. Home maintenance encompasses a wide range of preventative tasks that all contribute to occupant health, occupant safety and security and overall sustainability. From mold prevention to electricity safety tips from a code inspector, here are some of the highlights pulled from the resources.

- Never overload electrical cords or power strips. Be sure the total amount of energy used by appliances and lights plugged into the cord or strip does not exceed that capacity.
- Don't use appliances that have damaged cords.
- For mold prevention, watch for leaky pipes, condensation and wet spots, and fix sources of moisture problems as soon as possible.
- There are several materials and items that shouldn't be flushed down the toilet, including medication, disposable wipes, coffee grounds and more.
- To prevent your pipes from freezing this winter, drain water from swimming pool and water sprinkler supply lines following manufacturer's or installer's directions.

## Preventing Mold

*IMPORTANT TIPS – On Mold Prevention and Control*

- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and water stains.
- Fix source of moisture problems as soon as possible.
- Prevent moisture caused by condensation by increasing surface temperature or reducing the moisture level in the air (humidity).
- Improve air flow to decrease moisture by opening windows or adding a fan.
- Keep heating, ventilation and air-conditioning drip pans clean, flowing properly, and unobstructed.
- Vent moisture-generating appliances, such as dryers, to the outside where possible.
- Maintain low indoor humidity, below 60 percent relative humidity (RH), ideally 30 to 50 percent, if possible.
- Perform to a regular schedule of building/HVAC inspections and maintenance.
- Provide drainage outside foundation walls and slope the ground away from the foundation to speed drying after rainfalls.

## Backyard and Pool Safety

*IMPORTANT TIPS – To Remember For Backyard and Pool Safety*

- Make sure all pedestrian gates in the barrier fence for your pool are self-closing and self-latching. Other gates should be equipped with a locking device and should be locked. Gates should swing outwards away from the pool.

- Remove all chairs, tables, large toys, pool equipment or other objects within 45 inch radius of fence that would allow a child to climb up to reach the gate latch or enable the child to climb over the pool isolation fence. Chain link fences should have a mesh opening of 1 ¾ inches or smaller. Repair any openings in fencing that would allow the passage of a 4 inch diameter sphere.

- Reaching and throwing aids like poles should be kept on both sides of the pool. These items should remain stationary and not be misplaced through play activities.

- All pool and hot tub drains (suction outlets) must have a cover or grate that meets industry standards for suction fittings marked to indicate compliance with ANSI/ASME A112.19.8 2007 (Suction Fittings For Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs) or the successor standard ANSI/APSP/ICC 16-2017 (Suction Outlet Fitting Assemblies for Use in Pools, Spas and Hot Tubs). Check to see that these covers are not broken or in disrepair, and that they are anchored firmly over the drain openings. The pool should be closed immediately when broken, missing or noncompliant suction outlet drain covers are first noticed.

- Install a pool alarm to detect accidental or unauthorized entrance into the water. While the alarm provides an immediate warning, it is not a substitute for the barrier fences, door alarms and safety covers required by the code.

- Install either an automatic or manually operated, approved safety cover to completely block access to water in the pool, spa or hot tub. The covers should comply with ASTM F1346 (Standard Performance Specification for Safety Covers and Labeling Requirements for ALL Covers for Swimming Pools, Spas and Hot Tubs). Never allow anyone to stand or play on a pool cover.

- Check for warning signs of an unsafe deck, including loose or wobbly railings or support beams, missing or loose screws that connect a deck to the house, corrosion, rot and cracks.

- Where present, a barbeque grill shall be placed away from siding, deck railings and out from under eaves and overhanging branches. Do not use grills in garage, porch or enclosed area that could trap carbon monoxide. Never grill on top of anything that can easily burn.

- Keep children away from grills when in use. Establish a safety zone around the grill and instruct the children to remain outside of the zone. A chalk line works great for this purpose. Never leave the grill unattended.

- When grilling, have a fire extinguisher, a garden hose or several gallons of water close by in case of a fire.

## Private Sewage Disposal

*Private Sewage Disposal – Flushing Out the Facts*

If you are not connected to a public sewer and instead rely on a private sewage disposal system to remove waste from your home, you'll want to read on so you can properly protect your plumbing system. You can cause great harm to your home, your family and even the environment if you're not familiar with the proper use and maintenance of your private sewage disposal system.

In fact, one careless flush of your toilet could have a negative impact on your yard, garden, or the places where your pets, children or grandchildren play. Even worse, you could compromise the safety of your home's water supply.

*What is a Private Sewage Disposal System?*

Private sewage disposal systems, sometimes referred to as onsite wastewater treatment and disposal systems, are typically underground treatment structures, commonly used in rural areas without centralized sewer systems. They use a combination of nature and proven technologies to treat wastewater from household plumbing produced by bathrooms, kitchen drains and laundry.

The most common septic system consists of a septic tank and a drain field, or soil absorption field (more commonly referred to as a leaching field).

The septic tank digest organic matter and separates floatable matter (e.g., oils, fats and grease) and solids from the wastewater collected within it. Soil-based systems discharge the liquid (known as effluent) from the septic tank into a series of perforated piping buried within the leaching field, chambers, or other units designed to slowly release the effluent into the soil.

*How Private Sewage Affects the Planet*

Lately, there's been more headlines about antimicrobial pollution which can be caused by compromised sewage disposal systems. In fact, The World Health Organization (WHO) recently released an article about it.

Septic systems can become a source of nutrient pollution if not properly maintained.

So how can we protect our private plumbing systems and the planet? You can start by not flushing that kitty litter…

*What You Shouldn't Flush Down the Toilet*

Deceased goldfish aside, people flush some pretty strange things down their toilets. Here are some materials and objects that should never be flushed down the toilet:

- Medication
- Disposable wipes
- Coffee grounds
- Grease & oil
- Cigarette butts
- Cotton swabs

- Feminine hygiene products
- Cat litter
- Latex condoms
- Paper towels and facial tissue
- Water softener discharge, bleach, chemicals and harsh cleaners
- Dental floss

*Safe Disposal of Medication & Chemicals*

One of the trickiest things to safely dispose of is unused medication. Here are a few tips to make it easy:

**Community-Sponsored Drug Take Back Programs**

Many communities have drug take back programs so check with your local law enforcement officials to find a location near you. You can also check with the DEA to find a DEA-authorized collector in your community.

**Pharmacy Take Back Programs**

Some pharmacies offer on-site medicine drop-off boxes, mail back programs and other ways to help you safely dispose of your unused medicines.

**National Prescription Drug Take Back Day**

The National Prescription Drug Take Back Day aims to provide a safe, convenient and responsible means of disposing of prescription drugs, while also educating the public about the potential for abuse of medications. The U.S. Drug Enforcement Administration (DEA) sponsors National Prescription Drug Take Back Day in communities nationwide – so, check your calendar.

**The FDA Flush List**

If you don't have a drug take back location near you, check the FDA's flush list to see if your medicine is on the list. Medicines on the flush list are (1) sought-after for their misuse and/or abuse potential and (2) that can result in death from one does if inappropriately taken. These medications can be flushed, but remember not to flush anything that is not on the flush list.

*Septic System Maintenance 101*

Just like your digestive system, your septic system has 'good' bacteria present that helps to dissolve organic waste. While it's fine to use septic treatments occasionally, you'll want to avoid overuse.

- Have your system inspected regularly and pump your tank as necessary.
- Use water efficiently {Too much water is NOT good for your leaching field}.
- Don't dispose of household hazardous wastes in sinks or toilets {Your toilet is NOT a trash can}.
- Avoid driving vehicles or placing heavy objects on the drain fields.

## Water Safety Tips for Winter

*How to Avoid Frozen Pipes*

- Drain water from swimming pool and water sprinkler supply lines following manufacturer's or installer's directions. Do not put antifreeze in these lines unless directed. Antifreeze is environmentally harmful and is dangerous to human, pets, wildlife and landscaping.

- Remove, drain and store hoses used outdoors.

- Add insulation to attics, basements and crawl spaces. Insulation will maintain higher temperatures in these areas.

- Check around the home for other areas where water supply lines are in unheated areas. Look in the garage, and under kitchen and bathroom cabinets. Both hot and cold water pipes in these areas should be insulated.

- Consider installing specific products made to insulate water pipes like a pipe sleeve or installing heat tape, heat cable or similar materials on exposed water pipes. Pro tip: Newspaper can provide some degree of insulation and protection to exposed pipes – even ¼" of newspaper can provide significant protection in areas that usually do not have frequent or prolonged temperatures below freezing.

- Consider relocating exposed pipes to provide increased protection from freezing.

- Keep garage doors closed if there are water supply lines in the garage.

- Open kitchen and bathroom cabinet doors to allow warmer air to circulate around the plumbing.

- When the weather is very cold outside, let the cold water drip from the faucet served by exposed pipes. Running water through the pipe – even a trickle – helps prevent pipes from freezing.

- Keep the thermostat set to the same temperature both during the day and at night.

- If you will be going away during cold weather, leave the heat set to a temperature no lower than 55.

*How to Thaw Frozen Pipes*

- If you turn on a faucet and only a trickle comes out you may have a frozen pipe. Likely places for frozen pipes include outside or within exterior walls or where your water service enters your home through the foundation.

- Keep the faucet open. As you treat the frozen pipe and the frozen area begins to melt, water will begin to flow through the frozen area. Running water through the pipe will help melt ice in the pipe.

- Apply heat to the section of pipe using an electric heating pad wrapped around the pipe, an electric hair dryer, a portable space heater (kept away from flammable materials), or by wrapping pipes with towels soaked in hot water. Never use a blowtorch. Kerosene or propane heater, charcoal stove, or other open flame device.

- Check all other faucets in your home to find out if you have additional frozen pipes. If one pipe freezes, others may freeze too.

*The Center for Disease Control and Prevention reports that thousands die each year from exposure to extreme cold or from carbon monoxide poisoning due to faulty heating units.*

*Deadly fires are also a danger due to space heaters or homeowners using torches to thaw frozen pipes. A dangerous inconvenience, frozen pipes can reduce the performance level of your hot water heater, halt the daily functions of your household and cause damaging leaks that can lead to a buildup of mold or mildew.*

*Within the 2021 International Plumbing Code (IPC), the installation of water, soil and waste pipes is restricted in the following areas unless there are adequate provisions made to protect such pipes from freezing. These areas include:*

- *Outside of a building*
- *In attics or crawl spaces*
- *Concealed in outside walls*
- *In any location subjected to freezing temperatures.*

*Making sure your home is built or updated to the most recent code will keep your family safe in the winter. Following these tips will also ensure your family's comfort during the cold winter months. The following list offers preparations you can make at home and when traveling to make sure you have a fun and safe winter.*

- *Red Cross: Winter Storm Safety*
- *Red Cross: Your Family Disaster Supplies Kit*
- *Federal Alliance for Safe Homes: Winter Freeze Flash Card*
- *Generator Safety Tips from NFPA*
- *CDC: Extreme Code Prevention Guide*
- *NOAA: Winter Storms – the Deceptive Killers: A Preparedness Guide*
- *FEMA Emergency Supply List*
- *FEMA Family Emergency Plan*
- *Winter Preparedness Tips for Persons with Disabilities*
- *Winter Tips for Older Americans*
- *Preparing Your Pets for Emergencies Makes Sense*
- *How to Winterize Your Manufactured Home*
- *AARP: 5 Hidden Health Dangers of winter*
- *Cold Weather Pet Safety*
- *Electric Portable Space Heater Safety*

*For more winter safety resources, visit www.iccsafe.org/winter-safety-resources.*

# Sustainability at Home

The International Code Council is helping our communities forge a path forward on energy and sustainability to confront the impacts of a changing climate, and these guiding tenants can be used at home, too! With fresh water supplies at risk and an ever-increasing load on the power grid threatening communities around the world, every proactive step we take at home makes a big difference in decreasing our footprint and burden on the system. Keep these tips in mind the next time you set your thermostat, plan a home renovation and more.

- Install water-saving shower heads and low-flow faucet aerators, and use your water meter to check for hidden water leaks.
- Never dump anything down storm drains.
- Change the filters in the heating and cooling system of your home regularly.
- Replace your light bulbs with LEDs, which use up to 90 percent less energy and last up to 25 times longer than traditional incandescent bulbs.
- Design your home with materials that are easily recyclable, reusable, renewable, durable, affordable and low maintenance.
- Build a rain garden to capture roof drainage and divert it to your garden or landscaping. Be sure to check local rules on rainwater harvesting prior to installation.

## Conserving Water at Home

*IMPORTANT TIPS – For Conserving Water at Home*

- Don’t flush trash down your toilet. One to three gallons of water are wasted every time you flush a cigarette butt, facial tissue or other small bits of trash.
- Check your toilets, faucets and pipes for leaks regularly.
- Install water saving shower heads and low-flow faucet aerators.
- Use your water meter to check for hidden water leaks.
- Insulate your water pipes.
- Take shorter showers. The recommended time is 5 minutes.
- Don’t run the water while brushing your teeth or shaving.
- Only wash clothes and run the dishwasher when there is a full load.
- Don’t leave the water running when washing dishes by hand. A typical kitchen faucet uses 2 gpm of water.
- Sweep driveways, sidewalks and steps rather than using a garden hose.

## Prevent Stormwater Runoff Pollution

Things You Can Do to Prevent Stormwater Runoff Pollution

- Use fertilizers sparingly and sweep up driveways, sidewalks and gutters.
- Never dump anything down storm drains or in streams.
- Vegetate bare spots in your yard.
- Compost your yard waste.
- Use least toxic pesticides, follow labels, and learn how to prevent pest problems.
- Direct downspouts away from paved surfaces; consider a rain garden to capture runoff.
- Take your car to the car wash instead of washing it in the driveway.
- Check your car for leaks and recycle your motor oil.
- Pick up after your pet.
- Have your septic tank pumped and system inspected regularly.

## Energy Efficient Homes

*IMPORTANT TIPS – To Remember For Energy Efficient Homes*

- Change the filters in the heating and cooling system of your home regularly. Heating and cooling uses more energy than any other system in the home, accounting for approximately 43% of a year's total energy spending. Dirty filters overwork equipment which leads to early equipment failure. Replacing filters every 1-3 months saves up to $5 each month on utility bills and results in healthier indoor air.

- Install a programmable thermostat to keep your home comfortably warm in the winter and comfortably cool in the summer. ENERGY STAR® estimates homeowners save, on average, $180 each year when programmable thermostats are properly installed and customized to your household's schedule.

- Use the orientation of your home to reduce heating and cooling needs. During warmer months, close curtains and shades on the sunny side of your home to help keep the inside temperature cooler and reduce the work of your air conditioner. Open shades during cooler months to allow the sun to warm your home.

- Replace your light bulbs with LEDs. LEDs use up to 90% less energy and last up to 25 times longer than traditional incandescent bulbs.

- Install lighting controls such as occupancy sensors and dimmers to save electricity. Occupancy sensors automatically turn lights off when not in use and can reduce wasted energy by roughly 30%. Dimmers can reduce energy use by about 20%. For additional savings, use natural light when possible.

- Reduce the amount of air that leaks in and out of your home by caulking and weather-stripping to further reduce heating and cooling costs. The EPA estimates homeowners can save 15-20% on heating and cooling costs by air sealing their homes and adding insulation in attics, floors over crawl spaces and basements.

- Turn off and unplug home electronics and other devices when not in use. Using a smart or advanced power strip to manage plug loads is an easy way to save money on your electric bills – the average household could save $100 or more annually by reducing the standby load for game consoles alone.

- Choose energy efficient products – such as ENERGY STAR® certified products – when you buy or replace household appliances. Save additional energy by running your appliances at night and washing your clothes in cold water.

- Learn to effectively use the fans in your home. Spot ventilation fans – including the exhaust fans in your bathroom, laundry room and kitchen – are effective at removing moisture and indoor air pollution. Leaving these fans running longer than necessary, however, can cost your money. Ceiling fans can also increase energy savings, but it's important to turn ceiling fans off when leaving the room.

- Insulate your water heater to reduce heat loss and improve efficiency. Installing an insulation blanket is a simple and inexpensive way to improve the efficiency of your water heater, especially when the water heater is older or located in an unconditioned space.

## Building Green, Living Better

*Green Home Improvements*

Whether you're building a house from scratch or looking to increase the energy efficiency of your home, there are a number of things you can do to make your home more sustainable and green.

Buildings have an enormous impact on the environment. According to a report by the U.S. Green Building Council (USGBC), the design, construction and operation of buildings accounts from more than 40 percent of energy used and pollution generated in the United States. Typically, demolition and construction debris accounts for 15-20 percent (in some places, up to 40 percent) of municipal solid waste in landfills. According to some estimates, as much as 90 percent of this waste could be reused or recycled.

***Green Planning***

*Building Green*

Building green helps reduce negative impacts on the environment and preserve the Earth's resources for future generations. Building green doesn't necessarily mean your home has to be more expensive or that you need to use alternative materials and methods. In fact, as long as the methods are efficient and environmentally friendly, it is possible to reduce overall expenses and build green using traditional materials.

*Selecting Your Property*

When selecting a site to build upon, the best choice is one that works for both you and the environment.

- Avoid building in environmentally sensitive locations, such as wetlands, flood zones, hurricane-prone areas and endangered wildlife habitats.
- Check on the proximity to public transportation, community resources and bike trails to reduce the need to drive.
- Consider developing an infill or greyfield site – a site where a house was previously built and where water, phone, and sewer lines may already be in place – instead of clearing undeveloped lands, known as greenfield sites. Reusing an existing foundation minimizes the amount of excavation required.

*Positioning Your Home on the Site*

The orientation of your house on the site can affect the amount of energy it consumes.

- Position the house on the site to best capture sunlight in cooler months, and reduce heat gain in warmer months. An east-west axis orientation is usually best.
- Be realistic about how much space you need. A smaller house will require less material to build, as well as less energy to heat and cool over the life of the structure.

- Build up instead of out. A multi-story house has less roof and foundation area than a one-story house of the same square footage, is more efficient to heat, and has ceiling framing that doubles as floor framing for the floor above.

- Reduce heat island effects. In warmer regions, select light-colored roofing. Limit paved areas around the house, or keep paved areas light colored or shaded.

*Designing Your Home*

Whether you prefer a traditional or modern look, design your home with materials that are friendly to the environment.

- Use materials that are easily recyclable, reusable, renewable, durable, affordable and low maintenance.

- Maximize insulation, weather strip door openings and seal ducts.

- Install high-performance windows and energy-efficient appliances, and consider solar effects when locating windows.

- Choose high-efficiency (90 percent and higher) heating and cooling equipment with seasonal energy efficiency ratio (SEER) of 16 or higher. Install HVAC equipment and duct systems in conditioned space for additional energy savings and improved indoor air quality. Put in programmable thermostats to minimize energy use, especially when nobody is home.

*Protecting Your Water Resources*

Be mindful to conserve water and protect the water supply during and after construction.

- Control soil erosion during the building process. Be sure to manage run off and sedimentation so they do not affect storm water systems.

- Design the landscape around the home to limit long-term water and energy use and preserve the natural environment. Minimize water-intensive landscaping, lawn areas and grasses and replace with native plant species.

- Consider installing a rain water and run off collection system and a gray water recycling system to water lawns and gardens.

- Select low-consumption or dual-flush toilets; low-consumption or waterless urinals; and low-flow lavatory, sink and shower faucets.

**Putting Green into Action**

*Recycling Construction Waste*

Throughout the building process, as well as after, be sure to recycle waste materials.

- During excavation, stockpile and reuse excavated topsoil.

- Collect shipping boxes, wood scrapes, metal and other construction waste to recycle or sell for salvage.
- Buy, sell or donate used construction supplies. Check stores and websites for everything from insulation, windows and doors to tiles, appliances and more.
- When installing new carpets, choose those made from recycled materials and recycle your old carpets.
- Take used batteries, fluorescent bulbs, unwanted chemicals and paints to recycling or hazardous waste collection facilities.
- Include recyclable material storage areas.

*Taking a Deep Breath*

Good air quality benefits everyone, especially people with allergies and children with asthma.

- Incorporate whole-house ventilation and ceiling fans.
- Use eco-friendly adhesives, sealants, paints, coatings and carpeting that emit low levels of volatile organic compounds. Install entryway dirt-capturing systems. Use good quality air filters and change them regularly.
- Clean your house with biodegradable, environmentally friendly cleaning products.

*Finding Useful Information*

A number of resources are available on green and sustainable building requirements. Here are some of the well-known rating systems and standards.

- The Code Council, in partnership with ASHRAE, USGBC and IES has published the International Green Construction Code (lgCC), powered by ANSI/ASHRAE/USGBC/IES 189.1, to address traditional and high performance buildings. Available at www.iccsafe.org.
- The National Association of Home Builders (NAHB) and the Code Council developed the National Green Building Standard (NGBS) (ICC 700-2020) to address green home building construction practices. Learn more at www.iccsafe.org.
- The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is a benchmark developed by the USGBC. Learn more at www.usgbc.org.
- The Green Building Initiative (GBI) develops the GBI/Green Globes rating system and standard. Available at www.thegbi.org.

## Non-Potable Water Reuse

*Using Water Wisely: Water Reuse*

Water conservation and efficiency have become increasingly important in recent years due to water scarcity, droughts, and water contamination in many areas of the world. As world water consumption rises, water reuse or water recycling, has become a manageable approach in enhancing water security, sustainability and resilience.

Have you ever thought about how much water you use daily? In the United States alone, the U.S. Environmental Protection Agency (EPA) estimates the average American family uses more than 300 gallons of water per day at home with 70% of this use occurring indoors. In addition, 30 % of household water use in the U.S. is used outdoors, but in drier climates this amount can be much higher.

Water reuse is a safe, innovative practice where wastewater is reclaimed, treated and reused for different purposes.

Emerging as a non-conventional water resource, non-potable water reuse systems offer a viable approach to sustain potable water supplies.

*What is non-potable water?*

Non-potable water is water that is unsafe for human consumption, but can be treated to be safely used in applications such as toilets/urinal flushing, clothes washing, floor drain traps and irrigation. Some examples of non-potable water include:

- Graywater – water discharged from lavatories, bathtubs, showers, clothes washers, and laundry trays.
- Rainwater – water from natural precipitation.
- Reclaimed water – municipal wastewater or industrial wastewater treated to specified level for an intended use.
- Captured condensate – condensate that collects on refrigeration equipment.
- Stormwater – natural precipitation, including snowmelt that has contacted a surface at or below grade.

*Why Use Non-Potable Water Reuse Systems?*

While non-potable water sources do not undergo the same federally-mandated treatment requirements as drinking water, water reuse systems are designed to treat non-potable water to safe levels for purpose like toilet flushing, clothes washing and irrigation.

Non-potable water reuse can result in significant savings for the consumer. According to the U.S. Water Alliance and the Water Research Foundation, non-potable water reuse systems can save up to 25% of the total potable water use in residential buildings and as much as 75% in commercial buildings. Additionally, treated wastewater for non-potable applications is far less expensive to treat and can be as little as one third the price of treating potable water.

*Ways to Recycle*

Here are a few ways you can get started with recycling non-potable water:

- Check with your local wastewater treatment purveyor on programs and rules for rainwater harvesting. Where rules allow, the installation of rain barrels to collect rainwater runoff from your roof for outside watering purposes is a terrific way to help conserve the potable water supply.
- Install a graywater collection system. With a little plumbing work, you can minimize your potable water usage by using graywater as an alternative water source for flushing toilets and irrigating lawns and gardens. Be sure to check with the Building Department for the most up to date requirements for graywater collection system installations and always be sure to use a licensed plumber for the installation to ensure protection from cross contamination of the potable water supply.
- Build a rain garden to capture roof drainage and divert it to your garden or landscaping. Be sure to check your local rules on rainwater harvesting prior to installation.

*Building codes and standards like the International Plumbing Code (IPC) continue to build upon previously established water efficiency standards by going through a regular update process. In addition, here are some resources to learn more about properly utilizing non-potable water reuse systems and for protecting out world's water supply:*

- *Water Reuse and Conservation Requirements by State*
- *National Blue Ribbon Commission for Non-potable Water Systems (Making the Utility Case for Onsite Non-Potable Water Systems)*
- *United States Environmental Protection Agency's (EPA) How We Use Water*
- *U.S. Environmental Protection Agency's National Water Reuse Action Plan*