

The Power of Preparation

Managing Your Homes
Electrical Service
Today And Tomorrow

Developed and produced by



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The average home in the US is 45 years old. If your home is older, chances are your home's electrical system needs to be upgraded. Not only is an aging electrical system a potential hazard, but it is ill equipped to handle the growing electric needs that today's lifestyles demand.

When faced with determining what electrical areas should be upgraded, the options can be confusing. This guide is designed to help you wade through the myriad of information and issues relating to your electrical system and the potential upgrades to consider.

Most Home Electrical Systems Were Designed for Minimal Electric Needs



When your home was built, chances are that it was built with a basic electrical system designed to handle the electric needs at that time. If your home was built 20 or 30 years ago, our electric needs have changed drastically in that time. During that time, energy hogging devices such as hair dryers, air conditioners, clothes irons, microwave ovens, home entertainment centers, exercise equipment or Jacuzzi tubs became the norm rather than the exception.

If you add electrical equipment for an in-ground pool or hobby work shop with power-grabbing equipment, you can easily exceed the limits that your original electrical fuse box was meant to handle. While running one of these items on an electrical circuit may be fine, running more than one on the same circuit often leads to a blown fuse or circuit breaker. With an older fuse box, there is the potential that an overloaded circuit may cause arcing, which could lead to a fire.

In addition to the extra uses we expect our electrical system to handle these days, there is also the fact that many older electrical systems may not even be up to today's safety codes.

How Your Home's Electrical System is Designed

The engine of your home's electrical system is either the fuse box or electrical service panel with circuit breakers.



Connected to this electrical "engine" are the outlets and switches that allow you to connect and utilize your electric devices and appliances.

Your fuse box or service panel is designed to handle only so many outlets or switches on each "circuit." However, as time progressed, these circuits have been used with electric items that often exceed the limits of the circuit. That's why it is common for a circuit to fail when you plug in two items that use a large amount of electricity into the same circuit, such as an iron and a microwave. That results in a blown fuse or tripping the circuit breaker. While these blown circuits are designed as a safety measure, it also means great inconvenience for the homeowner.

Therefore, it is a good idea to look at your electrical system and determine what upgrades you might need to fit both your budget and your lifestyle.

Where to Begin?

The first thing to consider is whether your home's electrical system meets your current electric needs, both from a safety and a lifestyle perspective. Unfortunately, most homes built more than 20 years ago don't have enough circuits necessary to safely power much of today's household items.

In addition to overloaded circuits, many older homes have outlets and wiring that may not be up to today's safety codes, or that have just gotten worn and faulty over time. This can cause overheating and possibly a fire.

Check Your Outlets and Switches



The first thing you need to do is look at the plugs in all your rooms to determine if they are safe. Over time, the wiring connection to the outlet can become loose or frayed, causing any device plugged into the outlet to turn on and off while you are using it.

That could be the reason why the light you have plugged into a certain outlet flickers. Instead of "jiggling" the cord to your light or other device to make it work, you should either re-attach loose connections to the outlet or replace the outlet if it appears damaged.



In areas where you have outlets near water, such as in bathrooms and kitchens, you are required to have GFI (Ground Fault Interrupter) outlets. GFIs are designed to protect you from electrical shock by interrupting a household circuit when there is a difference in the currents in the hot and neutral wires.

Certain Appliances and Exercise Equipment Use Lots of Power and Need Enhanced Circuits



Have you ever used your microwave and an iron at the same time and tripped a circuit breaker? That's because some electricity-hogging appliances need to have either a separate circuit or a circuit that can handle more than one of these types of appliances being used at a time. The solution is to upgrade the circuits on your service panel to accommodate these energy-hogging appliances.

Appliances and electric items that often need upgraded or separate circuits include:

- microwave ovens
- clothes irons
- garbage disposals
- dishwashers
- refrigerators and stoves
- window air conditioners



Exercise equipment such as treadmills, stair climbers, elliptical trainers and exercise bikes also use more than an average amount of power to run. Having a separate circuit for this equipment would eliminate the potential for blown fuses or circuits. In addition, this exercise equipment should always be plugged into a surge suppressor to ensure that the circuit boards and digital technology that runs this high-tech equipment doesn't get damaged in the event of a power surge or blackout while in use.

Sensitive Electronic Equipment Also Deserves Special Care



Today, it is not uncommon for just about every room in the house to have a television or computer. These high-tech electronics also have power supplies and circuit boards that are also sensitive to voltage spikes and surges just like your exercise equipment. Therefore, it also makes sense to isolate the outlets used for this equipment from other household circuits. You also need a good surge protector for this sensitive and expensive equipment.

Seasonal Lights Can Draw a Lot of Power

If you are the type that puts up a lot of Christmas lights both inside and outside, during the holidays, you have probably blown some fuses or tripped the circuit breakers when those same lights are plugged into a circuit that also runs other appliances. While we aren't generally using that many lights at once to cause problems, it would make sense to ensure that your circuits can handle any additional lighting you may need for your home by upgrading your circuits.

Outdoor Power Needs Require Special Outlets and Circuits



Today's homeowners are spending a lot of time and money to add decorations, hot tubs, fountains and pools to enhance their outdoor living and entertaining experience. Unfortunately, many are doing so without upgrading their outdoor outlets and circuits to ensure safe operation.

For example, all your outdoor outlets, including inside your garage, should be 20-amp GFI protected. This will protect you against potential electric shock that is more prevalent outdoors due to wet conditions and water in pools, fountains and hot tubs. You should also consider adding separate circuits for your garage door opener, hot tubs, pools, outdoor lighting, and for the outlets on your deck or patio.

Analyze Future Electrical Needs

Once you go through your house to analyze your current power needs, it is important to determine if you may have any additional electric needs planned in the future that will require upgrading your service panel. Include any hobbies your family enjoys. Many hobbies that use high-powered electric equipment, such as a woodworking shop or sewing machines, will need separate circuits. In addition consider;



Medical Equipment

As our society ages, more and more people are finding themselves needing special medical equipment, such as oxygen pumps, hospital-type beds that require power, or even electric wheel chairs that need recharging. All of these may require a separate circuit.



Home Theaters/Game Rooms

People who remodel their homes often add entertainment centers to enjoy with the family. Often, that high-tech entertainment equipment requires special electric circuits and surge suppressors.



Electric Car

If there is a new Chevy Volt or other electric car in your future, you should consider adding a 220 volt outlet in your garage so you can charge your car twice as fast as the standard 110 volt line. These new electric cars will draw as much power as a window air conditioning, so you need to make sure you accommodate this extra power need.



Portable and Whole-House Generators

Whether it is summer or winter, storms can result in the loss of power. A few hours without electricity may be tolerable, but many outages can last days depending on the severity of the storm. While that can be a huge inconvenience, it can also be damaging to your home and even life threatening for many people with medical conditions.

For many people, buying a small gas-powered generator is sufficient to run a refrigerator, a sump pump and a few lights or small appliances, but these portable generators are noisy and can be very dangerous to operate. Primary hazards of portable generators include electric shock and carbon monoxide poisoning.

Every year, numerous people die in incidents related to portable generator use. If you plan to use a portable generator, make sure you follow the instructions that come with the generator. Never use a generator inside a home or garage, even if the windows and doors are open. You should only use a portable generator outside and away from windows, doors and vents.

In addition, you should be cautious when using generators in wet conditions because of the potential risk of shock and electrocution. You also need to ensure that you follow instructions regarding connection and disconnection of lights and appliances, and make sure you use a heavy duty, three-prong extension cord. Failure to follow exact instructions can lead to damaged appliances and potential electric shock.

If you need to power more than a few lights and appliances during a power outage, you may want to consider a permanent backup power system installed in your home. These systems have the potential to power as many lights and appliances as you want, including your air conditioner and furnace. Having permanent back-up power can also be vital for people who have serious medical conditions and require reliable power to run their medical equipment.

A permanent backup power system, often known as a “whole house” backup generator, has a transfer switch installed right next to your current electrical box.

When the power goes out, it automatically transfers the power to the backup generator, even when you aren’t home. The generator is connected to your home’s main natural gas or propane line and is much quieter than a portable generator. In fact, these units are often quieter than a central air conditioning unit.

While these backup power systems do have the capacity to power the entire house, many homeowners are opting for more affordable partial backup systems that may power 10 or more circuits. Often, that is sufficient to give you the type of power solutions you require to live comfortably until the electric company can restore your power.



Dealer
Generator Systems



Wind Power is Now Available for Your Home

With the annual rise in energy costs, more homeowners are looking at ways to tap into alternative energy sources. Unfortunately, many of these "green" solutions are expensive and not very practical for the typical homeowner.

A new product from Honeywell can enable homeowners to tap into wind energy as a supplement to standard electric power supplied by their local utility.

This breakthrough wind energy system for home and business features a wind turbine that is about the size of a TV satellite dish, can be placed on the roof of a home or a pole in the yard and is able to produce up to 20% of an average household's annual electricity needs.

Unlike traditional wind turbines that require a minimum wind speed of 7.5 miles per hour (mph), the Honeywell Wind Turbine begins generating energy with winds as low as 2 mph.

Bratcher Electric is member of the Honeywell Wind Turbine Service Network, one of the only electric contractors in the state that is able to install and service this new technology advancement.

Your Electric Needs and Finding a Reputable Contractor

This brochure is designed to give you an overview of the various electric issues and needs you may have in your home and to help you make educated decisions when you decide to improve your home's electric system or upgrade your lights and outlets.

Having a basic idea of what you need to do is only the start. You need to find a reputable electrical contractor who will analyze your home's electric system and needs, give you an honest estimate of the work to be done and provide you with excellent service during and after the job.

To find a reputable electrical contractor, follow these steps:

-Make sure any electrical contractor you are considering is licensed in the State of Michigan. You can do this by contacting the Michigan Department of Licensing at www.michigan.gov/dleg.

-The electrical contractor should also have someone on staff with a master electrician's license. The master electrician is in charge of and responsible for code compliance of all installations of electrical wiring and equipment.

-You should check an electrician's references with past customer to make sure they did the job properly. You can also contact the Better Business Bureau and the International Association of Electrical Inspectors to determine if the electrical contractor has any complaints against their company.



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Bratcher Electric Inc. is a full service electrical contracting firm that has been working with and taking care of its customers for over 50 years. Our goal is to provide complete customer satisfaction for every job that we perform.

Our reputation is of utmost importance to us and we pride ourselves on the referral business that we currently have.

Our growth is dependent upon the knowledge and experience of our employees and their ability to assess every situation and complete the job.

We are fully licensed and insured. We specialize in new home wiring, stand-by generators, service upgrades, surge protection, code upgrades, service changes, wind turbines and service maintenance.

For a free estimate, contact us at (734) 722-0037 or visit our website at www.bratcherelectric.com