

# Homeowner's Manual



*... a comprehensive guide to your  
home's "green" features*

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## **Introduction**

Congratulations on becoming a Habitat for Humanity homeowner!

Becoming a new homeowner is exciting and challenging. Your new, green home is an incredible investment. The maintenance of your house is very important because it protects and adds value to your investment for yourself, your family, and future generations to come.

As an owner, as soon as you move into your house, the maintenance begins. It will cost you time if you handle things yourself, or it will cost money to hire another party to maintain your house for you. Homeownership means that your budget must be a lot more flexible because you'll have to be prepared for unexpected repairs.

Your NAHB or LEED green certified home has many complex and modern green building features. In order to properly maintain and operate all of these attributes, you will need to extensively familiarize yourself and your family with the “how’s” and “why’s” of each feature. Only with proper maintenance and operation will all of your unique, purposeful green features be maximally optimized and retained for years and years to come. If you take care to properly use each attribute, your energy savings and utility costs will continue to stay low, pollutants in the air and environment will continue to be reduced, and your family’s health will not be negatively impacted by non-green practices.

This manual includes the “what’s, where’s, how’s, and why’s” of all of your green building household features, your home’s tests, analyses, and certifications, as well as extra tips for green lifestyle practices.

(Note: All manufacturers’ manuals for further reference, guidance, and care for all of your new equipment, fixtures, and appliances are attached to the perspective units themselves.)

## **Acknowledgements**

Habitat for Humanity Bay-Waveland Area, Inc. would like to sincerely thank New York City Habitat for Humanity and Mizuho for their guidance and contribution to this green building homeowner’s manual.

## **What is an Energy Star ® Qualified New Home?**

The energy used in homes often comes from the burning of fossil fuels at power plants, which contributes to smog and pollution, acid rain, and risks of global climate change. So, the less energy used, the less air pollution that is generated.

Homes that earn the ENERGY STAR ® certification must meet strict guidelines for energy efficiency set by the U.S. Environmental Protection Agency. Energy Star homes can include a variety of energy-efficient features, such as effective insulation, high performance windows, tight construction and ducts, efficient heating and cooling equipment, and Energy Star qualified lighting and appliances.

These features contribute to improved home quality and homeowner comfort. They also lower energy demands, reduce air pollution, and save you money.

(<http://www.energystar.gov>)

(Insert Green Rating Certificate to be obtained from NAHB.)

## Windows

### What Are They?

Your high performance Energy Star® windows are SilverLine brand, Series 2900, single-hung with a vinyl frame. They are certified through the National Fenestration Rating Council, and consist of a 5/8" dual glass pane. In addition, an extremely thin and invisible layer of metal or metal oxide, called a low emittance (low-E) coating, is applied to the surface to further reduce the amount of heat passing through the window. Your windows hold a U-factor of 0.35, a solar heat gain coefficient of 0.31, and a visible transmittance of 0.52.

### How Were They Installed?

At the time of installation, your windows were spray-foamed around the interior perimeter to prevent air leakage, as well as house-wrapped, taped, and caulked on the exterior to prevent moisture seepage. This ensures an airtight, moisture-proof seal. You should not feel a draft around any windows or see moisture between the glass panes.

### Why Energy Star® Windows?

Windows play a key role in the energy efficiency of a home. During summer, they can allow unwanted heat into your home; in the winter, they can account for up to 25% of heat loss. They are also crucial to a home's livability because they are your best source of natural light. High performance windows make the house quieter and more comfortable while saving energy and money.

### Care and Maintenance:

Your single-hung windows come with a half screen and a bottom sash that tilts out and can be removed for easy cleaning. (Squeeze levers in the upper corners of the bottom window and pull the sash up or down. Pull window toward you. Carefully reposition the sash in the appropriate pockets to ensure proper closure.)

Glass panels can be cleaned by using a lint-less cloth, sponge, or chamois and a commercial or homemade glass cleaner. You can also use water and a mild soap. Using a rubber squeegee will expedite drying time.

A mild household detergent solution may be used to clean the interior and exterior surfaces of the vinyl frames.

Do not use harsh abrasive detergents, paint removers, solvents, or razor blades since they could damage the product surface.

**Tip:**

To make sashes glide up and down more smoothly, spray a silicone lubricant sparingly on the balances (the mechanical parts that counter-balance the weight of the sashes). Clean the balances with alcohol or a soap solution.

**Homemade Window Cleaner:**

Lemon Formula (for slightly soiled windows): Mix 4 tablespoons lemon juice with 1 gallon water.

Ammonia Formula (for heavily soiled windows): In a 1 gallon bucket, mix ½ cup ammonia, 1 pint rubbing alcohol, and 1 tablespoon hand washing liquid soap. Fill with enough water to make 1 gallon.

([www.silverlinewindow.com](http://www.silverlinewindow.com))

## Insulation

### What Is It?

Your 2' x 6' exterior walls, the entire surface area under your floor system, and your entire roof are encapsulated with 5 ½" open-cell spray polyurethane foam insulation. Open-cell foam is comprised of tiny cells of the foam that are not completely closed. The cells are broken and air fills all of the "open" space inside the material, giving it a fairly soft or "cushion"-like feel. It is also soy-based, made of recycled plastics, and blown with zero ozone-depleting agents.

### Why We Chose It:

In our Southern climate region, one is engaged in a battle to keep warm, humid air from condensing on cool air-conditioned surfaces. One of the most important properties of foam insulation is its ability to stop the movement of air in a planned air barrier system. Water vapor carried by leaks in building enclosures to places where the water vapor can condense poses a larger threat to the health and durability of a building than water vapor moved by diffusion through vapor-permeable building materials. Open-cell foam insulation is vapor-permeable. It also serves as an added air barrier to drafts that try to enter your home, and it prevents air leakage from inside your home.

Other perks of open-cell foam insulation include an R-value, the rating of a material's resistance to heat flow, of around 3.8 per inch and the use of water as its blowing agent. Also, it does not contain HCFC's (hydrochlorofluorocarbons) which deplete the ozone layer, it doesn't shift over time or settle, and it is low in density (0.5 lb. per cu. ft.).



## Roofing

### What Is It?

Your roofing consists of several layers: ½” BluWood plywood decking, ice-and-water shield stick-down membrane preventing wind and water from coming through under the roof, then a synthetic perma-felt material, followed by 2” by 4” BluWood “nailer strips” for metal installation, and finally the metal “tin” roof. This metal, called “Galvalume ®,” is comprised of recycled sheet steel, with chemically treated 55% aluminum and zinc alloy coating.

### Why We Chose It:

A metal roof reflects much more sunlight and heat than a shingled roof. With the reduction of heat build up through the roof, your comfort is increased while your air conditioning costs are decreased and thus more energy is conserved. Your roof color of “zinc cote” meets and surpasses Energy Star ® requirements, having a solar reflectance index value of 61. (Its Solar Reflectivity score is 52.45 with an Emissivity rating of 0.87.)

Your metal roof comes with a 5-year labor warranty, and a 25-year material warranty.

## Plumbing

### Low-Flow Showerheads and Faucets

#### What Are They?

Your Waterpik® ecoflow showerheads restrict the rate of water flow from your showerhead to 1.5 gallons per minutes without reducing the intensity of the water flow. They have 5 spray settings. Your showerheads have met the challenge to both conserve and offer a satisfying shower by engineering the movement of water, sending it through special orifices that control droplet size, focus the stream, and increase the blast by mixing in air, creating turbulence or pulsing. Low-flow showerheads draw in air and have it forced into the water stream. The air-water mixture under pressure creates a high velocity spray, which makes it seem like more water is coming out than actually is.

Your Moen® bathroom faucets restrict the rate of water flow to 1.5 gallons per minute without reducing the intensity of the water flow. Aerators added to faucets add air to water, providing the same pressure with less water flow. Faucet aerators replace the faucet head screen, lowering the flow by adding air to the spray.

#### Why We Chose Them:

Most standard showerheads use twice the water needed for a thorough, enjoyable shower. Every day, three billion gallons of water flow through showerheads in the United States – half of it unnecessarily. The toll this excess takes on one of our most precious resources, clean water, is a blow to both the environment and your pocketbook. For instance, a five minute shower can use up to 35 gallons of water and account for more than one fifth of household water use.

A low-flow showerhead conserves water and saves you money – about \$75-100 per year on water bills and \$30-60 or more per year on energy bills (depending on utility rates). Every low-flow showerhead pays for itself within the first year.

Similarly, low-flow faucets with aerators cut water usage of faucets by as much as 50%. New technology, such as an aerator, compensates for pressure, providing the same flow you would find in a regular faucet.

([www.waterpik.com](http://www.waterpik.com), [www.moen.com](http://www.moen.com))

## Dual-Flush, High-Efficiency Toilets

### What Are They?

Your toilets are Glacier Bay Model #N2316. Rather than the traditional one-handle, one-directional flush system, your toilet handles move two opposite directions for flushing. Labeled with a half-shaded circle, pull the handle toward you for flushing of liquids only (urine). Labeled with a fully-shaded circle, push the handle away from you for flushing of solids (feces). As certified WaterSense toilets, meeting EPA criteria and other ecological certifications, they exhibit a partial 1.1 gallon per flush for liquids and a full 1.6 gallon per flush for solids. The elongated chair heights also meet ADA standards.

### Why We Chose Them:

It is estimated that low-flow toilets alone could save up to 22,000 gallons of water per year for a family of four! Your toilets never use more than 1.6 gallons of water per flush as compared to 3.5 gallons of water used by a standard toilet.

Different types of low-flow toilets use various technologies aimed at making the toilet more functional. Flushing performance has also improved in recent years. Your toilets have the highest rating (10) for flush performance, meaning trouble clearing the bowl and clogs will be minimal to absent.

([www.HomeDepot.com](http://www.HomeDepot.com))

## Water Heating System

### What Is It?

Your home has a 40-gallon, self-cleaning Rheem, GE, or Whirlpool ® electric water heater located in your utility room closet.

It also has a mani-fold (or mani-block) distribution system, located in a bedroom closet, for easy accessibility. All of your house's water comes into this central location through a large pipe, where it divides and feeds into smaller pipes for each individual plumbing fixture. Each hot and cold water line is labeled and allows for easy and immediate shut-off if necessary.

### Why We Chose It:

It enjoys 3" insulation around its jacket as well as pre-installed internal heat traps to prevent heat loss and maximize heat use efficiently. Furthermore, it has an energy factor of 0.93, while the highest and best rating possible for electric water heaters is 0.95. Your water heater also was built with a self-diagnostic control system to save energy and money.

The tank itself has a twelve year warranty.

In addition to convenience, your plumbing mani-block system has several benefits. Because smaller plumbing lines are used per fixture, the amount of time it takes for water to get to each fixture is reduced. Less water is used, and less recovery time is experienced. For example, the amount of time spent waiting for hot water is significantly reduced. Also, if someone is showering and a toilet is flushed, the shower temperature should not vary.

Your mani-fold system was created with less piping junctions, so the chance for failure and leakage is drastically reduced. There are no joints in the walls as with a standard plumbing system. In the instance a repair is needed, simply turn off the fixture at the main panel in the guest bedroom closet. No standard shut-off valves exist on the fixtures themselves.

([www.whirlpool.com](http://www.whirlpool.com))

## Heat and Cooling System

### What Is It?

Your heat pump and condensing unit is a two-ton Rheem® RPQL-024JEZ. It has a rating of 15 SEER, which stands for “seasonal energy efficiency ratio.” The SEER value is the rating and performance standards that have been developed by the U.S. government and equipment manufacturers to produce an energy consumption rating that is easy to understand by consumers. It has a universal formula and conditioning that can be applied to all units and compensates for varying weather conditions. The higher the SEER rating, the less energy that is required to produce the desired effect.

Your unit has a two-speed air handler, model RHLL-HM2417JA, which has a fan in it that brings air in from within the house through your return air vent, and the handler then conditions or heats it and recycles the air back through the duct work and out into your transfer grills (the vents in each room’s ceiling).

Your air filter in your return air vent is a MERV 8, WEB lifetime eco-filter. It is a high-efficiency, washable and reusable three-stage filter that attracts and captures household allergens such as dust, pollen, dander, and mold.

### Why We Chose It:

Most newer high-efficiency units have a SEER of 12 or 13. With your unit having an exceptionally higher SEER value, much less energy is needed to keep your house at a comfortable temperature in the winter and summer months. A 12 SEER unit would consume over 1 ¼ times more than a 17 SEER unit. With significantly less energy being consumed, more of your money is saved with your electric bill.

Your unit has a five-year equipment warranty for parts.

Your system’s air filter performance has been rated a MERV 8 based on its efficiency. Residential filters typically are rated in the range of MERV 1-10, with higher ratings indicating more efficient filters. The reuse of the filter reduces landfill waste by lasting for years. It takes 120 disposable paper filters over ten years to replace your washable eco-filter! Simply wash it each month with water and shake the excess out before reinstalling.

([www.rheem.com](http://www.rheem.com), [www.lowes.com/lowes/lkn?action=productDetail&productId=171068-1361-LTADJ&page=none](http://www.lowes.com/lowes/lkn?action=productDetail&productId=171068-1361-LTADJ&page=none))

## Thermostat

### What Is It?

Your programmable digital thermostat is an Energy Star® Rheem® 500-Series Model RHC-TST501CMMS. It has a plethora of features, including de-humidification control, heat and cool automatic change-over, an outdoor temperature display, a backlight option, optional audio notifications, a continuous 3-speed fan, intelligent scheduling and program anticipation, and a reminder for air filter and humidifier maintenance.

### Why We Chose It:

The many, many features of your thermostat allow for top-of-the-line energy and cost savings. It constantly communicates with your indoor and outdoor condenser units for utmost energy efficiency and comfort. Running the fans at a lower speed will conserve energy. It takes a little more time to heat or cool your house than a standard thermostat would, but in doing so your air intake is first dehumidified, improving your indoor air quality. Your diagnostic thermostat will also interpret your practices after a few days and will automatically adjust itself according to your recent needs.

Your thermostat will even let you know when a service call is needed to protect your heating and cooling equipment, in addition to simple maintenance practices, making it an extremely invaluable system for you and your family.

[www.rheem.com](http://www.rheem.com)

## Ventilation

### Range Hood Exhaust

#### What Is It?

If your range hood exhaust is built into your overhead microwave, none of these devices are currently Energy Star ® labeled. However, your range exhaust has multiple settings and vents to the outside rather than into your attic or back into your home. If you did not provide a microwave, your model is a Broan QL130WW.

#### Why We Chose It:

More importantly than the model chosen is the manner in which the excess air is vented. By-products such as humidity, grease, and other contaminants are created from boiling water and food products on your stove. With a standard exhaust, these products would pass through a charcoal filter and blow right back into your home. By venting your exhaust directly to the outside air, your family and guests will not breathe in any of your cooking by-product contaminants.

#### Care and Maintenance:

To clean all surfaces, use a mild soap and water with a soft cloth or sponge. Do not use any type of abrasive cleanser or scrubbers. Don't overlook cleaning your grease filter as necessary with mild soap and water.

([www.broan.com](http://www.broan.com))

### Bathroom Exhausts

#### What Are They?

Your guest bathroom contains a variable two-speed, Energy Star ® Panasonic WhisperGreen FV-08VKS3 continuous ventilation fan. Your master bathroom has an Energy Star ® Harbor Breeze #7108-01-L ceiling-mount exhaust fan.

#### Why We Chose Them:

Using exhaust fans during showers are crucial for preventing mildew build up and mold. The Energy Star ® compliant will cut down on energy consumption and homeowner costs. Both fans contain a highly efficient motor blade for maximum air draw of 80-110 cfm, along with near silent operation. Also, they vent to the outside air rather than into your attic. It is *necessary* to run the fan 20+ minutes to remove moisture from the air following a shower!

Your bathroom exhausts have a six and a ten year warranty.

([www.lowes.com](http://www.lowes.com), [www.panasonic.com](http://www.panasonic.com))

## Appliances

### Range and Refrigerator

#### What Is It?

Your range is a Whirlpool RF110AXS. It is a white, free-standing electric range with a standard cleaning oven. Ranges are not currently Energy Star ® labeled.

Your refrigerator is an Energy Star ® qualified Whirlpool ET8WTEXMQ. It is an 18.2 cubic foot unit with an upper freezer, clear crisper bins, and optional icemaker.

#### Why We Chose Them:

Whirlpool Corporation donates to any Habitat for Humanity affiliate an upgraded, energy-efficient range and refrigerator. Your refrigerator alone can be the single biggest electricity-using appliance in your home. An Energy Star ® refrigerator saves you money because it is better insulated, has a more efficient motor, and has a more precise temperature and defrost mechanism.

#### Care and Maintenance:

Clean surfaces with mild, non-abrasive cleaners. Soap, water, and a soft cloth or sponge should be used to clean spills. Never use an abrasive cleaning pad. Food spills containing acids, such as vinegar and tomato, should be cleaned promptly, as they may affect the range's finish.

Keep the refrigerator set at 35-38 degrees Fahrenheit and your freezer at 0 degrees Fahrenheit. Minimize the time the door is open.

([www.whirlpool.com](http://www.whirlpool.com))



## Washer and Dryer

### What Are They?

Your washer is a high-efficiency Energy Star® Maytag Centennial MVWC400XW. Its 4.3 cu. ft. capacity has a sensor technology with four temperature settings that sense each load size for custom amounts of water and energy used every time. It has a ½ horsepower motor, a commercial grade transmission, and a stainless steel wash basket. Additional features include 11 automatic wash cycles, extra spin and rinse options, and a 2x lifetime tested drive system.

Your dryer is a Maytag Centennial MEDC400VW. Its “GentleBreeze” drying system and supersize capacity dries clothes with consistent results. The “DuraCushion” dryer drum provides dependable tumbling with less friction and wear to reduce snagging. Seven cycles with three temperatures, along with the “Smooth Balance” suspension system, the “QuietSeries” 100 sound package, and a 1/3 horsepower high-torque motor ensure a smooth and thorough dry per load. Additionally, a 90-minute wrinkle prevention option can be combined with any cycle.

### Why We Chose Them:

An Energy Star® washer can save you up to \$160 per year on energy bills while using up to 70% less water and 80% less energy than older models. Your model will use about 128 kWh per year of electricity, costing you only about \$14 per year (depending on utility rates) when combined with your electric water heater. With this low operating cost, your washer will pay for itself in just over four years.

Although dryers are not currently Energy Star® labeled, your model has been designed to compliment your washer in load capacity, features, and settings.

### Care and Maintenance:



***Your high-efficiency washer REQUIRES use of a detergent with an “h.e.” logo on its label!*** Failing to use detergent marked with this symbol can permanently damage the effectiveness and longevity of your washer, causing premature replacement at your expense.

See your washer and dryer “User Instructions” for further service, care, and maintenance. The owner’s manual and warranty information can also be found on the Maytag website according to appliance model number.

### Tip:

Line-drying clothing is free! ([www.maytag.com](http://www.maytag.com))

## Light Fixtures and Bulbs

### What Are They?

Your home consists of an advanced lighting package, which means that a minimum of 60% of your interior hard-wired fixtures are Energy Star® labeled, with 100% Energy Star ceiling fans installed. Your Energy Star fluorescent fixtures consume 75% less energy than standard incandescent fixtures. Your exterior flood light and bedroom closet lights are also motion-detected.

Instead of incandescent bulbs, your fixtures have compact fluorescent light (CFL) bulbs. Some are screw-in (as used in most standard lamp fixtures), but most are 2-prong or 4-prong pin bulbs. All can be purchased at most large hardware stores such as Lowe's or Home Depot.

### Why We Chose Them:

Energy Star® lighting fixtures use ¼ less energy than traditional fixtures and distribute light more evenly. Because your home has the advanced lighting package, you can save more than \$170 per year in energy costs. Saving energy helps prevent pollution of burning coal gas emissions and air pollutants at the source. Your ceiling fan fixtures are 50% more energy-efficient than conventional units.

Your Energy Star® fixtures carry a two year warranty (twice as long as the industry standard). In addition, your ceiling fans have a 30 year motor warranty.

Your CFL bulbs use 2/3 less energy than incandescents to provide the same amount of light (e.g., a 13-watt CFL produces 60 watts of energy), and last up to 10 times longer. The hourly life of CFL's is at least 10,000 hours, or about seven years with regular use. They generate 75% less heat than standard incandescent bulbs, saving drastically on cooling costs in the hot summer months. Over one bulb's lifetime, you'll save \$30 or more in energy costs. While the upfront costs of CFL screw-in and pin bulbs are more expensive than incandescent bulbs, the longevity and energy savings are well worth it.

### Care and Maintenance:

Dust the fan blades of each fixture as necessary.

If a CFL bulb breaks, sweep up – don't vacuum – all of the glass fragments and fine particles. Wipe the area with a damp paper towel to pick up small shards. Put the used towel and the broken pieces in a plastic bag. Broken and burned out CFL's should be recycled similarly to other hazardous items, and taken to a local recycling drop off destination. (See the "Local Recycling" section.)

[www.energystar.gov](http://www.energystar.gov)

## **Smoke and Carbon Monoxide Detectors**

### **What Are They?**

Your CUG Industries ® carbon monoxide (CO) detector is a device that detects the presence of carbon monoxide, a colorless and odorless gas that is produced by incomplete combustion and can be lethal at high levels. If a high level of CO is detected, it will sound an alarm giving you a chance to ventilate the area or safely leave.

Your First Alert ® smoke detectors detect smoke and sound an alarm to alert you that there is a potential fire.

Your home has one combination smoke and carbon monoxide detector on the hallway or living room ceiling. Each of the bedrooms has a regular smoke detector just inside its entrance door.

### **Care and Maintenance:**

Your dual carbon monoxide/smoke detector is “hardwired,” meaning it gets its electrical current from the building wiring. It continually activates as long as electricity exists in the home. In case of a power failure, it has a backup battery.

Check detectors periodically by pushing the button located on the visible bottom side. (This procedure is recommended monthly.)

Replace the batteries or back-up batteries twice a year, or according to the manufacturer’s suggestion. A good time is when you change your clocks for daylight savings time.

## Paint

### What Is It?

Your interior wall, trim, and ceiling latex paint came from Valspar Corporation. The following are the item numbers, colors, and sheens (finishes):

Wallboard Primer: 44-990

Wall Color: 27-3301, "Off White," eggshell

Trim Color: 27-4400, "White," eggshell

Ceiling Paint: 27-1426 (2 gallons mixed with sheetrock mud)

### Why We Chose It:

Most paints release volatile organic compounds (VOC's) over time, a major source of indoor air pollution. Often people with asthma and sensitivities to allergens feel the negative health effects. Once outside, VOC's can react with other pollutants producing ground-level ozone that also affects human health.

Valspar has reconfigured their paints specifically to meet and exceed strict VOC codes. Your wallboard primer, finish paint, trim color, and ceiling paint all contain VOC amounts between 10 grams per liter and 45 grams per liter. In addition to having extremely low amounts of VOC's, your interior paint was also manufactured without mercury or mercury compounds, or pigments of lead, cadmium, chromium or their oxides.

### Care and Maintenance:

Latex paint cleans easily with a mild soap and water. Use a soft cloth or sponge. Do not use abrasive cleaners or scrubbing pads.

([www.valspar.com](http://www.valspar.com))

## Flooring

### What Is It?

Tongue-and-groove pre-finished bamboo flooring was installed for all general living areas. The bamboo grass species most often used to make flooring (*Phyllostachys pubescens*—known as “moso” in Japan, and “mao zhu” in China) matures in three years, is self-regenerating, and uses little or no fertilizers and pesticides. Bamboo flooring is made by slicing bamboo poles into strips. These strips are then de-starched by boiling, glued into boards, and milled. The coloring of your bamboo varies somewhat by shade, and this is due to a pressure-steaming or “baking” process in which the bamboo is carbonized.

Ceramic tile was laid in the “wet areas” of bathroom floors and showers and your utility room for moisture and water purposes. It is a natural product made up of clay, a number of other naturally-occurring minerals, and water.

### Why We Chose It:

Bamboo flooring is manufactured from a natural renewable source and is less energy intensive and polluting to produce than petroleum-based products such as vinyl flooring. It also provides a healthier indoor air quality than carpeted floors, which often contain VOC's and trap dust and dust mites that contribute to respiratory illnesses. Click-together products avoid any use of adhesives during installation, eliminating any toxins or VOC's to be emitted. Pre-finished products almost always use low-VOC, UV-cured finishes to further reduce harm to your health and the environment. An added bonus is that while the bamboo carbonization process can reduce the floor's final hardness by 10%, it still is harder than most hardwoods.

Ceramic tiles are extremely durable, water-resistant, and easy to maintain. While not extremely impact resistant, the wear ability of tile is the reason for its great durability. Their high density permits very little or no accumulation of moisture. With the grout installed, your tile became almost impervious to water damage. Your darker grout color will show less wear over time and hide dirt better than lighter options. In addition, ceramic tile flooring offers the best overall “dollar per mile” of any flooring surface. Its strength and resiliency to staining and wear makes it great for high-traffic areas. Ceramic tile is also manufactured using natural materials that do not retain odors, allergens, or bacteria, so it does not pose any hazards to human health. It doesn't burn (fire-resistant) or emit toxic fumes.

## Care and Maintenance:

Remember – dirt, grit, and sand act like rough sandpaper on your bamboo's finish and can easily cause scratches and dulling! By caring for your bamboo flooring correctly from the beginning, you will be able to enjoy its beauty for years and years.

- Use outdoor and indoor floor mats at both entrances to trap dirt and prevent damage.
- Sweep, vacuum (with the soft brush attachment), or dust mop regularly.
- Avoid oil soaps; they can leave a residue that dulls the finish. Instead, damp mop (not wet mop!) the product with a neutral pH cleaner made specifically for bamboo or wood floors. (See the "Cleaning Products" section.)
- Lift – do not drag – furniture to avoid easy scratching and denting of the floor.
- Felt pads purchased at a hardware store can be attached to furniture legs to help prevent scratching.
- Wipe up any liquid or solid spills as they happen. Standing water can warp a bamboo floor and permanently damage its finish.

While no floor is entirely maintenance free, ceramic tile comes about as close as possible to being service-free. The following are tips for maintaining your tile flooring:

- Sweep regularly and wet mop or sponge as needed. (Swiffer® brooms and mops work well.) Use common household cleaners.
- If a breakage occurs, simply remove the broken pieces, clean the area of remaining mortar, re-install a fresh coat of mortar followed by replacement tiles, and re-grout the repaired area seams. Keep several pieces of tile leftover from your installation for repairs.
- Every year, you may want to apply a tile and grout sealant. This helps to further protect the tiles and grout from regular wear.
- Keep a few tile squares in the event a repair is necessary down the road, as often it may be difficult or impossible to match exact flooring years later.

### Tip:

BonaKemi and Earth Friendly Products make excellent natural, non-toxic floor cleaners.

([www.bonakemi.com](http://www.bonakemi.com), [www.ecos.com](http://www.ecos.com))

## Countertops

### What Are They?

Your kitchen and bathroom countertops are made of solid  $\frac{3}{4}$ " granite, attached to a  $\frac{1}{2}$ " plywood backing with no added urea formaldehyde.

### Why We Chose Them:

Granite is a very strong, durable, nearly indestructible product. It is one of the hardest materials in the world and meant to last for a lifetime. It is able to resist many of the damaging aspects that could destroy a countertop made of other materials. Granite is heat-resistant and will not burn if a hot item is placed on the countertop. Unlike traditionally common Formica countertops, composed of high-VOC particle board, your granite countertops are all-natural stone and therefore do not emit harmful gases.

### Care and Maintenance:

Granite countertops require very little maintenance to keep in good form. Wipe surfaces of solid particles and liquids as necessary with a soft cloth or sponge and a mild soap. Abrasive cleansers and pads could cause damage to the finish.

Your countertops have been sealed and polished once before installation. Because granite is a porous material, however, it could absorb water, food particles, and bacteria over time as the sealant wears. To ensure stain resistance, apply a second coat. Use a water-based sealant (AFM Safecoat MexeSeal or StoneTech Impregnator Pro Sealer are good choices) for the best indoor air quality and the lowest VOC content. Some sealers can change the finish, gloss, or color of the material, so first do a test sample in an inconspicuous place.

([www.greenhomeguide.com](http://www.greenhomeguide.com))

## **Gutters and Downspouts**

### **What Are They?**

Aluminum gutters are attached to your house along the eaves of the roof to catch rainwater from the roof and channel it away from your home, at least five feet from your foundation, through the use of downspouts.

A rainwater collection bin has been attached to one of your downspouts. It is level with the ground below it and has a convenient faucet/hose hook up near its bottom. Its appearance is similar to that of a garbage can.

### **Why We Chose Them:**

Gutters are important for any home. They protect your foundation and keep mud and water off the sides of your home. Your gutter system has been designed to divert rainwater several feet from your foundation. This prevents water from seeping down into the foundation of your house. Water can be damaging over time, seeping into cracks, expanding and contracting with drastic summer and winter temperatures, and gradually cracking and shifting your foundation over time. This could lead to mild or potentially severe structural problems for a home.

Also if water were allowed to pool, it becomes a breeding ground for mosquitoes and other insects. Gutters eliminate this as well.

With the exception of the rainwater collection bin, the water flowing through each downspout empties into a limestone landscaped area to prevent erosion and preserve natural soils.

Your rainwater collection bin creates a way to reuse our natural freshwater resource for yard care and maintenance.

### **Care and Maintenance:**

To keep your gutters working at an optimum level, clean out any growth or accumulated debris that may block channels and prevent proper flow into downspouts. This should be performed at least twice a year, especially after autumn and spring.



## Keeping Your Home Clean and “Green”

### What Is “Green” Cleaning?

Cleaning your home is important because it helps remove harmful contaminants such as mold and bacteria. But many conventional cleaning products can also cause health problems. Fortunately, many green alternative, non-toxic cleaning products are now available at larger hardware stores such as Lowe’s and Home Depot.

Readily available brands include:

- Seventh Generation
- Citra-Solv
- Ecover
- Earth Friendly Product
- Simple Green

Check out [www.greenresidentialcleaning.com](http://www.greenresidentialcleaning.com) for great information on alternative green products and the specific brands they can replace. Categories include:

- Air Fresheners
- All-purpose cleaners
- Kitchen and bathroom cleaners
- Paper products
- Wood and bamboo floor care
- Dishwashing
- Insect Control
- Laundry

### Why Use Green Cleaning Products?

Toxic cleaning products can be a particular problem for people who have health conditions such as asthma or allergies or have chemical sensitivities or a weak immune system. Some cleaning products can cause headaches, dizziness, skin irritation, respiratory irritation and asthma, eye irritation, or worse. Some cleaners contain cancer-causing substances, or toxins that can affect your reproductive system, central nervous system, or your endocrine system.

**Choosing Green Products:**

- Look for products labeled “non-toxic,” “low-VOC” or “zero VOC,” and/or “biodegradable.”
- Look for unscented products as some people are sensitive to fragrance.
- As a general rule, try to avoid all products labeled “Danger--Poison.” Products labeled “Warning” can also be dangerous, but less so, and products labeled “Caution” are the least harmful of the three but can still be hazardous.
- Avoid products labeled “Corrosive,” “Severely Irritating,” “Highly Flammable,” or “Highly Combustible.”
- Avoid aerosols when possible. They often contain substances that are flammable and can contribute to poorer indoor air quality.
- Avoid using most “air fresheners,” especially if they contain paradichlorobenzene. Ingredients like this can cause headaches and other health problems.
- Avoid using moth balls. Instead, store wool clothes in plastic bags or airtight containers.

**Do-It-Yourself All-Purpose Cleaner:**

1 quart warm water  
1 teaspoon liquid dishwashing soap  
1 teaspoon borax  
½ cup white vinegar

Mix ingredients and store in a spray bottle. Use for countertops, flooring, walls, bathroom fixtures, etc.

([www.greenresidentialcleaning.com](http://www.greenresidentialcleaning.com))

## Indoor Air Quality

Indoor air pollution is a serious issue for today's homeowners especially if a member of your family has asthma or allergies. Some studies even indicate indoor levels of pollutants may be two to five times higher than outdoor levels. Although your home was built using many non-toxic materials (low-VOC finishes and adhesives, formaldehyde-free plywood and insulation, etc.) the use of many common products can release toxins and particles into the air of your home.

Cleaning your home regularly and using non-toxic cleaning and pest control products is a great start.

Potentially dangerous and air quality damaging household products include:

- Glues
- Paints and Thinners
- Waxes
- Varnishes
- De-greasers
- Disinfectants
- Strippers
- Caulking
- Air fresheners
- Hair dye

To keep your family healthy:

- Read product labels. Look for "non-toxic," "low-VOC," and "zero-VOC" labels. Use any suspicious products in a well-ventilated room.
- Avoid using moth balls. They contain pesticides and deodorants.
- Don't use air fresheners that contain paradichlorobenzene.
- Air out clothing that has been dry-cleaned before wearing.
- Avoid chlorine bleach unless absolutely necessary. Hydrogen peroxide is a good alternative.
- Consider a "no shoes" rule since pesticides and other irritants enter homes from the bottoms of your feet. Leave a shoe basket by the door and wear slippers.
- NO SMOKING ALLOWED! Even smoking indoors with a window open doesn't prevent other from breathing smoke.

([www.healthhouse.org](http://www.healthhouse.org))

## Green Pest Control

Ants, cockroaches, termites, and rodents are common in our warm southern climate. You can control these pests without using substances harmful to humans.

- Do not use toxic pesticide products, which will off-gas into the environment and your surroundings. Pesticides are harmful not only to pests they try to exterminate, but also to children, adults, and family pets. They have been linked to serious illnesses such as cancer, birth defects, and neurological and immune system disorders as well as allergies and asthma.
- As a general rule, avoid products labeled “Danger—Poison.” The [www.beyondpesticides.org](http://www.beyondpesticides.org) website provides a non-toxic solution to almost any type of pest you could encounter in your home.
- [www.greenresidentialcleaning.com](http://www.greenresidentialcleaning.com) also provides information on poison-free alternative products for insect control.
- If you decide you must use some chemical pest control products, consider using bait (rather than sprays) for cockroaches and ants, and traps (rather than poisons) for rodents.

### Best Pest Prevention:

Clean up and remove food sources! Keep kitchen countertops, stove tops, and floors clean on a regular basis. Put garbage in tightly sealed containers and empty daily. Thoroughly rinse recyclables.

Store sugars, grains, and pet food in glass jars with seals or gaskets, or plastic containers with tight-fitting lids. (This practice will also keep your food items fresher for longer.)

## Termites

Your home was built with many termite-resistant materials. Your foundation was treated for termites, and the design of its raised, cantilevered cement blocking system itself will help resist pests much greater than a cement slab or crawl space foundation. All of your walls, subfloor system, sheathing, porch and roof decking were treated with a chemical called borate, part of the BluWood termite treatment which further retracts termites and other pests.

You can look for signs of termite infestation in and around your home. One thing to look for is swarmers, a group of adult reproductives that look like “flying ants” and leave their nest to establish new colonies. They appear most frequently near light sources, during the day, on warm days after rain, and during the spring and autumn months.

Termites also build pencil-sized “mud tunnels” that connect the nest (moisture) to the food source (wood). By breaking the tubes, you can determine if the termites are active. Rebuilt damaged tubes indicate continued activity, while inactive ones are dry and will crumble easily. Look for these signs in the following areas:

- All sills, subfloors, joists, support posts, supporting piers, and wood under porches
- Places where concrete meets the wooden structure (Steps, pilings, etc.)
- Hollow blocks and cracks in cement and expansion joints
- Any exterior scrap wood, such as old tree stumps or fence posts

## Energy and Water Resource Saving Tips

In winter months keep the blinds and drapes of sun-exposed windows open in the daytime and close at night to conserve heat. In the summer months close your blinds in the daytime to keep the house cool.

Ceiling fans can keep you comfortable in the winter too. Reversing the direction of the blades pushes warm air down into the room.

Only wash and dry full loads of clothes.

Unless clothes are badly stained, wash in cold water. Always rinse clothes in cold water.

Turn off office equipment (TVs, radios, computers) and other appliances (toaster, DVD, coffee maker, stereo, microwave) when not needed, at night, or on weekends. Home electronic products use energy when they're off to power features like clock displays and remote controls. (In the average home, 40% of the electricity used to power home electronics consumed while the products are turned off.) At the very least, pull the plug on these appliances if you go on vacation.

(Tip: If you put several appliances—your TV, DVD, VCR and stereo, for example—on a surge protector, you can turn them off all at once!)

Use your exhaust fans sparingly. In just one hour they can remove a houseful of warmed or cooled.

Set the temperature control on your air conditioner no lower than 78 degrees. Each degree above 75 degrees on the thermostat saves you 3% of the energy used to cool your home.

Clean your air conditioning filter at least once a month. If you can do so safely, check and clean the condenser coils and fins on the outside of the unit.

Use your microwave to reheat food. It uses 60% less energy than reheating on the stovetop.

Refrigerator coils, usually located on the back of the refrigerator, are used to expel heat, and if they are dusty it makes your fridge use more energy. Vacuum the coils once a year, especially if you have dogs and/or cats. Animal hair can really inhibit heat loss.

Repair all leaky faucets. One drop per second can waste as much as ten gallons of water a day.

Take showers rather than baths. A typical shower requires only half as much hot water as an average tub bath.

Store drinking water in the refrigerator. Don't let the tap run while you are waiting for cool water to flow.

Don't let water run while shaving, washing your face, or brushing your teeth. This saves four gallons of water a minute. Wash fruits and vegetables in a half-filled sink rather than under running water.

Don't use the toilet as a wastebasket and don't flush it unnecessarily.

## Local Recycling

Each year in Mississippi, we throw away enough garbage to cover 600 football fields with a depth of 6 feet in compacted garbage! Your family has the privilege of committing to being a part of the waste reduction in Hancock County through simply recycling much of your waste materials.

Since Hurricane Katrina in 2005, Hancock County has not had the convenience of curbside recycling. In recent months, however, there have been four drop-off centers scattered throughout the county in the following locations:

- County trailers (3068 Longfellow Dr. in Bay St. Louis)
- West End restaurant (635 Hwy 90 in Waveland)
- Kiln Library (17065 Hwy 603 in Kiln)
- Turner St. (between Old Spanish Trail and Hwy 90 in Bay St. Louis)

Five local schools, as part of the Recycle Hancock program begun in 2008, are currently recycling cardboard and white paper generated. They also have drop-off bins for these items along with #1 and #2 plastics and aluminum:

- Second St. Elementary School (400 N. Second St. in Bay St. Louis)
- Bay-Waveland Middle School (600 Pine St. in Bay St. Louis)
- Bay High School (750 Blue Meadow Rd. in Bay St. Louis)
- Hancock Middle School (7070 Stennis Airport Dr. in Kiln)
- Hancock High School (7084 Stennis Airport Dr. in Kiln)

See [www.recyclehancock.org](http://www.recyclehancock.org) for further specifics on what products fall into the acceptable recycling materials in the area at this time. Any profit from Recycle Hancock will be donated to the schools, and the school that collects the most recyclables by the end of the 2009 year will be awarded an additional \$1000 for teacher supplies.

See Earth's 911 website ([www.cleanup.org](http://www.cleanup.org)) or call 1-800-CLEANUP for more information on specific recyclable products and where to take them in an area near you.



## Local Public Transportation

Public transportation is rare in Hancock County and in some places does not exist. There are few options at this time.

Coast Transit Authority (CTA) is a non-profit provider of safe, convenient, affordable public transportation across all cities within the coastal counties of Hancock, Harrison, and Jackson. It uses commuter vans and small buses to provide clean and dependable service through a variety of fixed routes with designated stops on a fixed schedule.

CTA also offers, on an appointment only basis, an ADA/para-transit service in which curb-to-curb transportation is provided for persons with disabilities who are unable to access or use the fixed route service. Senior citizens can also arrange transportation to contracted service programs, including grocery shopping, medical appointments, and senior citizen centers.

Fares range from \$0.60 to \$45.00, depending on age, disabilities, student enrollment, daily use, 3-day use, and monthly unlimited use.

Visit [www.coasttransit.com](http://www.coasttransit.com) or call 1-896-8080, ext. 0, for further information on routes and fares.

### **Tip:**

Walking, biking, or using another form of physical transportation to get to nearby stores and restaurants is free!

## Local Service and Maintenance Providers

Below are local service technicians that Habitat for Humanity Bay-Waveland recommends for maintenance to assure proper performance of equipment and structure.

### HVAC (heating and air conditioning):

Buck Ramond (Buck Ramond Heat & Air)	228-760-0180
Brian Woods (Wood's Heating & Air Conditioning)	228-832-8945

### Plumbing:

Kevin Jones	239-910-2930
Thad Sundrla	248-505-9870

### Electrical:

Kevin Headley (Headley Electric)	228-324-0896
Jimmy Ray (C A H Electric)	662-231-9150

### Landscaping and Lot Prep:

Billy Lamb (South Mississippi Land Improvements)	228-697-2711
Tom Hargrove (Tomad Site Improvement)	228-466-4901

### Lighting:

Dennis Lee (D & M Lighting)	601-799-6776
Jeanelle (Sunbelt Lighting)	601-251-0020
Yvonne (All Phase Electric)	228-864-7731
Paulette (Wesco)	228-864-9090

### Countertops:

Frank Zhang (Kitchen & Bath)	228-467-4009
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### Paint:

Ben, Fred, or Swanier (Sherwin Williams)	228-467-3938
Roxanne (Home Creations)	228-467-3734
Missy (McDonald Hardware)	228-467-5442

### Flooring:

Paula Gamboa (FloorCo)	228-563-5509
Chuck Jung or Christine (Bay Carpet)	228-467-5000

## Home Maintenance Checklist

Over time, the value of your home will increase, making it one of your most valuable assets for building a steady and secure future for yourself and your family. Regularly maintaining your new home is *absolutely crucial* to enjoying it for many decades to come.

### Monthly:



- Thoroughly rinse re-usable air filter with water, spraying the opposite direction of the air flow label. Shake excess and place in return air vent, noting air flow arrows pointing toward the unit's closet.
- Clean dirt and dust from around furnaces, air grills and ducts. Vacuum return air and air supply registers.
- Check for odor or physical evidence of mildew and mold, especially in bathrooms around vents, faucets, and water pipes. Light mold can be sprayed and removed with a diluted chlorine bleach solution. Let it sit for 5-10 minutes then wipe clean.
- Check smoke and carbon monoxide detectors. Replace batteries if necessary.

### Semi-annually:

- Pour ½ cup bleach down interior HVAC unit condensation drain pipe to prevent clogs.
- Check all appliance and extension cords. Replace frayed or split cords.
- Check weather stripping around exterior doors for damage and tightness of fit.
- Check all door and window hardware and tighten. Lubricate as necessary. Use a silicone spray for sliding door tracks and window tracks. (Oil will deteriorate.)
- Check all caulking, especially around bathtubs, sinks, toilets, countertop backsplashes, window sills, and exterior doors. Replace with long-lasting resilient caulking material as needed, such as silicone (for regular contact with wet areas) or latex.
- Clean faucet aerators, spray nozzles, showerheads, and drains. Equal parts vinegar and water in a bowl or plastic baggie, sitting for 5 minutes to overnight will remove mineral deposits. Use a toothbrush to clean out holes where water sprays.
- Check flooring covering joints and seams. Re-glue or re-grout as necessary. (See "Flooring" section for care and maintenance.)
- Check range hood filter and replace as necessary.
- Inspect foundation for termite/pest damage, as well as cracking or crumbling mortar. (See "Keeping Your Home Clean and 'Green'" section.)
- Trim any shrubs, trees, and plants at least one foot away from house (including foundation, siding, and roof) and heating and cooling equipment.
- Keep gutters and downspouts clear of debris for proper transportation of water away from your home. Check for leaks or rust.

**Annually or Bi-annually:**

- \_\_\_ Service your heating/cooling system using a qualified HVAC technician.
- \_\_\_ Check for water heater tank leaks and proper temperature setting (approx. 125 degrees).
- \_\_\_ Examine all exterior caulking, especially where two different materials meet, such as where the doors meet the siding. Replace as necessary.
- \_\_\_ Check exterior painted surfaces for peeling, chipping, blistering, or fading, water damage, or mildew. Pressure-wash if necessary. Stain bare wood for moisture protection if desired. (Whole-house painting should be done about every 10 years.)
- \_\_\_ Check windows for cracked or broken glass, holes in screens, and evidence of moisture build-up.
- \_\_\_ Check exterior stairs and ramps for loose treads or handrails. Repair as necessary with appropriate galvanized nails or screws and pressure-treated lumber.
- \_\_\_ Check Hardiboard siding for loose or missing pieces, lifting or warping, or any sign of mildew. Check bricks for cracked mortar or loose joints. Repair as necessary.
- \_\_\_ Examine all exterior trim for tightness of fit, damage, or decay.
- \_\_\_ Examine main support beams and columns as well as floor joists for bowing or warping. (Check with screwdriver or pocket knife to ensure wood is solid and free from decay.)
- \_\_\_ Check vents for free air movement. Clean screens and remove bird nests, spiders, insects, and dust.
- \_\_\_ Examine all roof flashing and the flashing around vent stacks, roof edges, and dormers.
- \_\_\_ Check for curled, damaged, loose or missing shingles. Inspect Galvalume metal roof for damage, holes, or corrosion. Contact a metal roofing specialist for repairs.

## Important Safety Valves and Controls

### Electrical Breakers and Shut-offs

If an electrical plug or device stops working, flip the appropriately labeled breaker the opposite direction (to the right or left), then flip it back. Don't flip it back if your outlet shows signs of dysfunction, such as sparking. Start with the interior breaker panel:



If an outlet or device is still not working, flip the appropriately labeled breaker in your outside electrical panel on the side of your home. Again, if signs of a fire hazard occur, do not switch back into the "on" position:



## Plumbing Shut-off Valves and Disconnects

Only one main water line enters your house from the outside. To shut off water to your entire house, simply turn this blue lever 90 degrees to the right. (It is currently shown in the “on” position.)



A huge advantage to the mani-fold plumbing distribution system is the ability to shut off each plumbing fixture in the easily accessible location of a bedroom closet. Simply use the red key (top center) to turn the appropriately labeled hot (red) or cold (blue) water line of the fixture:



This is the disconnect box for your water heater tank in the attic. You can also disconnect this at the mani-fold system panel, but it is a good idea to disconnect here as well if someone is working on the tank itself:



To shut off the valves of your washing machine, turn the silver handles of the hot (red) and cold (blue) water lines. This can also be performed at the mani-fold panel.



In a similar fashion, to shut off the water valves for your kitchen sink, turn either the red for hot water or the blue for cold water, located under your sink in the cabinet base:





## HVAC Shut-off Valves and Disconnects

Only switch this disconnect breaker if your heat and air system is showing signs of malfunction. It is located directly on your interior unit:



In the case of an emergency, your energy recovery ventilator's disconnect is simply a plug in the attic next to the unit itself:



## Various Utilities Installed in Your Wall Frames

Interior electrical panel box, with yellow electrical wires:



Electrical wiring installed (yellow wires with blue receptacle outlets and switch boxes) with kitchen plumbing on right side (red and blue hoses):



Master and main bathroom plumbing (white water pipes, red hoses for hot water and blue hoses for cold water to sinks and showers), as well as electrical wiring (yellow wires) and boxes (blue receptacle outlets):



Washer plumbing installed, with red (hot water) and blue (cold water) hoses and white water pipe for filling and draining:



This is your mani-block plumbing distribution system, with red hoses holding hot water and blue hoses holding cold water for each individual plumbing fixture. The main water line comes from below the house (the blue hose coming from the bottom center of the unit), where it is distributed at this point:

