

LEED for Homes
Operations and
Maintenance Tenant
Manual

Claremont on the
Square

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Part 1

Introduction to your new Home

What are Green Homes?

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What are Green Homes?

A green home is designed to be healthy, comfortable, durable, energy efficient, and environmentally responsible.

Why Green Homes?

According to the U.S. Department of Energy, all homes in the U.S. account for 22% of the total energy consumed and 21% of carbon dioxide emissions.

Construction and demolition waste represent 40% of the solid waste in U.S. Homes. They have a significant impact on the amount of water consumed, and on the amount of chemicals that can damage nearby bodies of water.

What is LEED for Homes?

LEED for Homes is a voluntary rating system administered by the U.S. Green Building Council (USGBC). USGBC is a non-profit organization that promotes the design and construction of high performance green buildings.

For more information on the LEED for Homes program, visit:

www.usgbc.org/LEED/homes

Keeping your Home Green

This manual provides operation and maintenance tips on keeping your new green home healthy, comfortable, durable, energy efficient, and environmentally responsible. Your home needs to be maintained to prevent equipment errors, minimize health risks, and to keep your home operating as efficiently as possible.

Emergency and Safety

Emergency Information

If you have any issues or concerns with your new apartment, please contact the front desk,

Locate central valve shut-off valves for each of the following:

- Water supply-in the laundry closets there are valves which will shut off any water supply to the apartment.
- Electricity supply-the breaker panel is behind the bedroom door.
 - Find the number of the local poison control center, especially if you have small children.
 - Locate the nearest hospital emergency room(s)
 - Contact local authorities' suggestions for local and regional natural disasters. Identify fire escape routes, particularly in large homes or multifamily buildings.
 - Please report any leaks to Maintenance.

Safety Information

- Keep the doorway free of clutter.
- Do not overload electrical circuits.
- Do not use unvented combustion equipment inside your home, such as barbecue grills, camping stoves, and kerosene heaters. They can release large amounts of deadly carbon monoxide inside your home.
- HVAC equipment and hot water heater are checked regularly by Maintenance. Please call if you have any issues.
- All hot water temperatures are set by Maintenance, please call if you need the temperature changed.
Maintenance will replace batteries in smoke detectors/carbon monoxide detectors and check that they are functioning once a year. If your smoke detector or carbon monoxide detector beeps, please contact the leasing office, 610-458-7644

Purpose of the Manual

A list of all of the measures installed in your LEED-certified home is shown in the Project Checklist. Further information on these measures can be found in the LEED for Homes rating System. Note that builders have some flexibility in which green measures (or LEED credits) they install in each LEED-certified home. Some of the features described in this manual may not be included in your LEED-certified home. Review the LEED for Homes checklist that was filled out specifically for your home to find out which features are installed.

The purpose of this document is to:

Highlight the operation and maintenance procedures for the LEED for Homes measures that were installed in your new home. Note that many of the LEED for Homes measures installed in your home should not require any operations or maintenance. For example, insulation that is more effective than what is required by code is installed behind drywall. This and other measures installed behind the drywall should provide their intended benefits throughout the life of your home, without the need for maintenance. Features that do not require maintenance are not included in this manual.

Describe operation and maintenance information for special LEED features that the builder has installed in your home. The builder has supplied these features to improve the overall performance of your home.

Suggest resources if you decide to do a renovation or addition to your home.

Provide green lifestyle tips. Your LEED-certified home includes many measures for efficiency. You can further reduce energy and water bill, and your environmental footprint, by following basic measures for conservation. In addition, the day to day behavioral choices that you make in other areas of your life, such as transportation, cleaning, and purchasing, can greatly affect your overall environmental footprint. The green lifestyle tips suggest behavioral choices that will help you live more sustainably, and that will often save you money as well.

Part 2

How to Maintain the Green Features in Your Home

Operation and Maintenance tips for:

Indoor pollutants
Lighting and Appliances
Heating, Cooling, and Ventilation Systems

Indoor Pollutants

Indoor pollutants can be controlled by reducing the amount of pollutants that are generated and by diluting pollutants once they are created. This brings in fresh air or removes polluted air with exhaust fans and vents.

Radon protection system

Radon is a naturally occurring gas that is emitted from soil. Different soils emit radon at different rates. Exposure to radon is the #1 cause of lung cancer among non-smokers in the United States.

This building is equipped with a passive radon evacuation system, has been tested for radon, and passed. Certification is enclosed. If radon is ever detected fans can be added.

Carbon Monoxide

Carbon monoxide is a colorless, odorless gas that is generally released during combustion (e.g., gas fired appliances and fireplaces). At high levels, CO can cause health problems, such as headaches and nausea. At very high levels, CO will cause death. LEED certified homes include CO monitors, which can help warn if there are dangerous levels in your home.

Your carbon monoxide detector is located in the living room.

Airborne Particles

LEED certified home includes several measures to reduce airborne particles.

Cooking generates particles; your home is equipped with a kitchen exhaust system that exhausts particles, humidity, and other pollutants from your home. Use the fan whenever you are cooking.

- Vacuum all carpets weekly, clean carpets annually.
Check/replace batteries in smoke detectors and carbon monoxide alarms. Please call the leasing office, 610-458-7644 if you need batteries replaced.
- Your bathroom fan is always running. Please see mechanical ventilation equipment in the heating, cooling, and ventilation section.

Cleaning materials, methods, and supplies

What is green cleaning? Cleaning that protects health without harming the environment.

A list of suggested cleaning materials, methods, and supplies is attached. Maintenance staff will be using green cleaning products from the list as well.

Environmental attributes to look for in cleaning products:

- Minimizes exposure to concentrates
- No ozone depleting substances
- Recyclable packaging
- Recycled-content in packaging
- Reduced bio concentration factor
- Reduced flammability
- Reduced or no added dyes, except when added for safety purposes
- Reduced or no added fragrances
- Reduced or no skin irritants
- Reduced or no volatile organic compounds (VOCs)
- Reduced packaging

Green Works and Simple Green cleaning products can be purchased at Target, Kmart, Home Depot, Lowes, and Walmart.

More information on green cleaning products can be found:

<http://www.epa.gov/>

Impacts of chemical fertilizers and pesticides

Chemical fertilizers will not be used in landscaping. If any insects or rodents are present in the apartment please contact the front desk and maintenance will use approved pesticides.

Lighting and Appliances

Lighting and appliances use 34% of energy consumed in homes and account for 47% of the energy costs. LEED certified homes include energy efficient lights, and Energy star appliances. You can conserve energy by turning off lights when they are not being used and unplugging appliances or using power strips.

Lighting

All lighting in your building is LED and CFL. Energy efficient bulbs and fixtures use 50-75% less energy, and can produce the same amount of light than traditional bulbs. When bulbs or fixtures need to be replaced, please contact the leasing office, 610-458-7644 and the maintenance staff will replace with Energy Star lighting.

Appliances

Appliances are all Energy Star. Energy Star appliances use less energy and water than conventional models. The user manuals for your appliances are attached.

If you have any issues with any of your appliances, please contact the leasing office, 610-458-7644.

Heating, Cooling, and Ventilation Systems

Space heating and cooling equipment

Your apartment is equipped with a high efficiency, through wall, gas heat and electric cooling system.

Behind the panel near the balcony door is the HVAC Unit.

The thermostat runs the heating and cooling. Directions for using the thermostat are enclosed. If you should have any questions or issues with the system, please contact the leasing office, 610-458-7644.

You can help maintaining your apartment by:

- Adjust thermostat for season change.
- Check that exhaust fans are unobstructed and working.

Mechanical ventilation equipment

Ventilation systems exhaust airborne pollutants from your home and replenish your home with fresh air.

Ventilation is achieved by exhaust air being pulled from the vent in the bathroom to the outside. These vents are constantly pulling 75 CFM. Incoming fresh air is delivered to the HVAC unit, then into your apartment. All LEED certified homes must have exhaust in kitchens, which is vented directed to the outdoors. This helps provide better indoor air quality and protect from moisture damage. If you should have any questions or issues with the system, please contact the leasing office, 610-458-7644

Merv8 filters are used in the building. Merv8 is a high quality filter used to collect more pollutants. Maintenance will be replacing the filters as needed. Maintenance will check and clean mechanical ventilation system.

Part 3

Handled by Building Maintenance

The Exterior Structure or Envelope
Interior Durability and Finishes
Plumbing
Yard

Handled by Maintenance

The Exterior Structure or Envelope

The exterior of your home, including the roof and siding is the first line of defense from protecting your home from rain, cold air, pests, and other things best kept outside. It is important to keep the exterior in good condition. Water should drain away from your home, and it should do so as quickly as possible. Water that pools on a surface can eventually leak through cracks in the surface, potentially causing damage to the structure.

Your LEED-certified home's builder is required to consider the durability risks at your home's site, and to design and build to mitigate these risks. (See the LEED for Homes Durability forms.) All LEED-certified homes also have water resistant materials in wet areas, such as bathroom, kitchens, and entryways.

- Check/repair all exterior caulking, weather stripping, and paint.
- Check roofing and flashing, and repair any damaged materials.
- Clean debris from gutters and downspouts.
- Remove excess snow from roof to prevent ice dams.
- Inspect crawl spaces for seepage/leakage.

Interior Durability

Just as rain can cause damage if it enters your home's exterior, leaks and moisture originating within the home can also damage the structure. Your LEED-certified home includes measures such as proper drainage and drain pans for appliances that help prevent water from pooling on surfaces in your home. Maintenance will be periodically checking to make sure that everything is in working order, and that materials such as bathtub grout are in good condition. This will help keep water from damaging materials below, and help reduce mold and mildew.

- Check/repair caulking/grout in and around showers/baths.
- Check for water leakage around water heaters, clothes washers and dishwashers.
- Clean or replace walk off mats.

Paints and Coatings

Many paints, coatings, and adhesives contain chemicals that slowly off-gas into the air. These chemicals are called Volatile Organic Compounds, or VOC's. Some of these VOC's can be harmful to your health. LEED-certified homes include paint, adhesives, and other materials that are "low voc". These have a lower content of these harmful, off-gassing chemicals than conventional products.

Low emitting paints (low VOC) were used in your home. If any painting is needed, please call the leasing office, 610-458-7644

Plumbing

Leaky pipes and fixtures can result in large amounts of wasted water, and cause damage to structures below. Plumbing can cause serious damage if it is not maintained during the winter.

Indoor Plumbing Fixtures and Fittings

All LEED-certified homes include measures that should reduce water use, relative to conventional homes that are built to the minimum building code. Measures that reduce hot water use will save both energy and water. Many LEED-certified homes include low flow fixtures, or plumbing has been designed so that the hot water tank is close to the fixtures that require hot water.

- Check/fix leaks immediately in pipes, fixtures and appliances.
- Prevent pipes from freezing: turn off outdoor faucets.

Irrigation

Because drought tolerant plants were used in the landscaping, no irrigation is required.

Green Power

Green power is electricity that is generated from resources such as solar, wind, geothermal, biomass, and low-impact hydro facilities. Conventional electricity generation, based on the combustion of fossil fuels, is the nation's single largest industrial source of air pollution. The increasing availability of green power enables electricity customers to accelerate installation of renewable energy technologies. As more green power sources are developed - displacing conventional generation - the overall environmental impacts associated with electricity generation will be significantly reduced.

Benefits of Green Power

Choosing green power offers a number of benefits to businesses and institutions, including:

- **Environmental stewardship** - Many innovative organizations are establishing environmental commitments to make their operations and practices sustainable. Choosing green power is a simple step towards creating a more sustainable organization.
- **Public image** - Green power can help improve an organization's public image by demonstrating environmental stewardship.
- **Customer loyalty** - Demonstrating environmental stewardship through green power may help increase an organization's customer and investor loyalty.
- **Employee pride** - Employees prefer to work for companies that give back to their communities and to the environment.
- **Power portfolio management** - Because some green power sources have no fuel costs, green power can help protect your power portfolio from volatile prices of fossil-fuel-generated electricity.
- **Power reliability** - On-site renewable generation can be a more reliable source of power than power distributed through the electric grid.

Green Power Options

Green power is available in four basic forms, the availability of which partially depends upon the status of electric utility restructuring in the state where the purchase is being made.

Blended Products

Also known as "percentage products," blended products allow customers, primarily in states with competitive electricity markets, to switch to electricity that contains a percentage of renewable energy. The renewable energy content of blended products can vary from 2 percent to 100 percent according to the renewable resources available to utilities or marketers.

Block Products

Block products allow customers served by monopoly utilities to choose green power from the electric grid in standard units of energy at a fixed price, which is converted to a premium and added to their regular electric bill. Customers decide how many blocks they want to purchase each month.

Green Tags or Renewable Energy Certificates

Green tags allow customers to purchase the renewable attributes of a specific quantity of renewable energy. Green tags are sold separately from electricity and can be purchased for a location anywhere in the U.S. In this way, a customer can choose green power even if the local utility or marketer does not offer a green power product. One green tag typically represents the renewable attributes associated with one megawatt hour of green power.

On-Site Renewable Generation

Customers can install their own renewable energy generating equipment at their facility. On-site renewable generation can increase power reliability, provide stable electricity costs, and help manage waste streams. Furthermore, in many states, excess green power generated on-site can be returned to the electric grid, in effect allowing customers to obtain credit from their utility. (This is also known as "net-metering.")

Certification and Accreditation

Green power certification and accreditation programs help ensure that customers get what they pay for when they choose green power.

- Green-e is a voluntary certification and verification program for green power products developed by the non-profit Center for Resource Solutions.
- The Green Pricing Accreditation Initiative, developed by the Center for Resource Solutions, accredits green pricing programs operated by regulated electric utilities.