



NYSERDA

A Guide to Renovating with Energy Efficiency in Mind



Renovating

WITH EFFICIENCY IN MIND



NYSERDA

If you're planning or undergoing a home renovation or upgrade, make sure to incorporate energy performance enhancements to improve your project's return on investment and save you time and money in the future. Energy-efficient homes lower your total cost of ownership and are more comfortable year-round.

Making a home renovation or upgrade with efficiency in mind offers many benefits:

- **Save money** on future energy bills
- **Reduce maintenance** time and costs
- **Enjoy year-round comfort** with better air quality and consistent temperatures
- **Improve the indoor environment of your home** with a reduced risk of allergens and better humidity control

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Kitchen Remodeling

WITH EFFICIENCY IN MIND

Planning a kitchen renovation is the perfect time to commit to making energy-efficient changes in your home. If you are thinking about or are already remodeling your kitchen, consider taking the following energy-saving actions.

- ❑ **Find a contractor who specializes in energy-efficient construction.**
If you haven't started your project yet, find a contractor who has invested in training related to energy-efficient and green building practices. Prospective contractors should be able to provide you with examples of projects in which they paired energy performance upgrades with a kitchen renovation.
- ❑ **Consider air sealing, insulation, and ventilation upgrades.**
If you are altering floors, ceilings, or exterior walls during your kitchen remodel, ask your contractor about upgrading insulation, sealing air leakage paths, and ensuring there is proper ventilation. These are some of the most cost-effective ways to save energy.
- ❑ **Select water-efficient fixtures.**
Choose energy-saving fixtures and appliances to dramatically reduce the amount of water you use. Invest in low-flow faucets and ENERGY STAR certified dishwashers for your kitchen to save on your water heating bills. Look for WaterSense labeled products, which use at least 20 percent less water than standard models, while providing equal or superior performance.
- ❑ **Make use of natural lighting.**
Design your kitchen remodel to make use of natural light, via skylights and windows. This will help reduce your lighting costs—and improve the overall aesthetics and comfort of the space.
- ❑ **Choose energy-efficient lighting.**
Kitchen remodels are a great time to make lighting system upgrades, such as installing LEDs, timers, motion sensors, and smart switches. Energy-efficient light bulbs use up to 90 percent less energy, cost less to operate, and can last up to 25 years longer than conventional light bulbs. They are also available in a wide array of design options.
- ❑ **Improve the energy efficiency of existing windows or upgrade to new ones.**
Heat gain and loss through windows is responsible for 25–30 percent of residential heating and cooling energy use. If your windows are already double-pane glass with a Low-E coating (resulting in low heat transfer and loss), you can further improve their energy performance and better manage comfort with the addition of insulated shades or exterior shading devices. If your kitchen remodel calls for window replacements, select high-efficiency, ENERGY STAR certified windows for the best performance.
- ❑ **Invest in energy-efficient kitchen appliances.**
If the appliances in your kitchen are old and inefficient, upgrade to ENERGY STAR® certified appliances. ENERGY STAR certifies efficient dishwashers, refrigerators, freezers, and more that cost less to operate than standard models.
- ❑ **Take advantage of clean heating and cooling technologies.**
If your heating or cooling system needs to be replaced, a kitchen remodel is a great time to consider clean heating and cooling technologies, like heat pumps. Heat pumps are a safer, more efficient choice for your home with no burning of fossil fuels, need for fuel storage tanks, or potential for carbon monoxide emissions.

Bathroom Remodeling

WITH EFFICIENCY IN MIND

Planning or undergoing a bathroom renovation is a great time to make your home more energy efficient and comfortable. If you are thinking about or are already remodeling your bathroom, consider taking the following energy-saving actions.

- **Find a contractor who specializes in energy-efficient construction.**
If you haven't started your project yet, find a contractor who has invested in training related to energy-efficient and green building practices. Prospective contractors should be able to provide you with examples of projects in which they paired energy performance upgrades with a bathroom renovation.
- **Install low-flow faucets and showerheads.**
Choosing low-flow faucets and showerheads can dramatically reduce the amount of water you use. Invest in low-flow faucets and showerheads for your sink and shower to conserve water and save on energy costs. Look for WaterSense labeled products, which use at least 20 percent less water than standard models, while providing equal or superior performance.
- **Choose energy-efficient lighting.**
Energy-efficient lighting options include LEDs, timers, motion sensors, and smart switches. Energy-efficient light bulbs use up to 90 percent less energy, cost less to operate, and can last up to 25 years longer than conventional lighting options. They are also available in a wide array of design options.
- **Make use of natural lighting.**
Design your bathroom remodel to make use of natural light, via skylights and windows. This will help reduce your lighting costs—and improve the overall aesthetics and comfort of your bathroom.
- **Install an energy-efficient ventilation fan.**
Efficient bathroom ventilation fans remove excess moisture and odors to protect your investment and maintain comfort. Install an ENERGY STAR certified ventilation fan, which provides better efficiency and comfort with less noise.
- **Improve the energy efficiency of existing windows or upgrade to new ones.**
Heat gain and loss through windows is responsible for 25–30 percent of residential heating and cooling energy use. If your windows are already double-pane glass with a Low-E coating (resulting in low heat transfer and loss), you can further improve their energy performance and better manage comfort with the addition of insulated shades or exterior shading devices. If your bathroom remodel calls for window replacements, select high-efficiency, ENERGY STAR certified windows for the best performance.
- **Consider air sealing, insulation, and ventilation upgrades.**
If you are altering floors, ceilings, or exterior walls during your bathroom remodel, ask your contractor about upgrading insulation, sealing air leakage paths, and ensuring there is proper ventilation. These are some of the most cost-effective ways to save energy.
- **Take advantage of clean heating and cooling technologies.**
If your heating or cooling system needs to be replaced, a bathroom remodel is a great time to consider clean heating and cooling technologies, like heat pumps. Heat pumps are a safer, more efficient choice for your home with no burning of fossil fuels, need for fuel storage tanks, or potential for carbon monoxide emissions.

Building an Addition

WITH EFFICIENCY IN MIND

Building an addition is the perfect time to make energy-efficient changes to your home. If you are thinking about or are already building an addition, consider making the following energy-saving improvements.

- **Find a contractor who specializes in energy-efficient construction.**

If you haven't started your project yet, find a contractor who has invested in training related to energy-efficient and green building practices. Prospective contractors should be able to provide you with examples of projects in which they paired energy performance upgrades with building an addition.

- **Consider size carefully.**

If you haven't planned the addition yet, consider size carefully. More space in a home requires more energy to heat and cool. Carefully consider the energy costs when determining the square footage and ceiling height of your addition.

- **Choose energy-efficient appliances and water fixtures.**

Whether the addition will serve as a home office, bathroom, extra bedroom, or something else, there are energy-efficient appliances and water fixtures that can help you save energy and money. Invest in ENERGY STAR and WaterSense labeled products, which can include dishwashers, televisions, low-flow faucets, and more.

- **Choose energy-efficient lighting.**

Energy-efficient lighting options include LEDs, timers, motion sensors, and smart switches. Energy-efficient light bulbs use up to 90 percent less energy, cost less to operate, and can last up to 25 years longer than conventional light bulbs. They are also available in a wide array of design options.

- **Make use of natural lighting.**

Design your addition to make use of natural light, via skylights and windows. This will help reduce your lighting costs and improve the overall aesthetics and comfort of your addition.

- **Install energy-efficient windows and doors.**

Windows, skylights, and doors are some of the most common air leakage points in a home. Invest in high-quality, efficient windows, skylights, and doors for your addition. ENERGY STAR certified products are more efficient, helping you use less energy, save money, and keep your home's temperature consistently comfortable.

- **Install ceiling fans.**

Install ENERGY STAR certified ceiling fans in your new space. These fans can reduce overall heating and cooling costs and are 40 percent more efficient than conventional fans—helping you save money and create a more comfortable space.

- **Invest in air sealing and insulation upgrades.**

Since you are most likely altering walls, floors, and ceilings during the addition, ask your contractor about upgrading insulation and sealing air leakage paths. Air sealing and insulation are two of the most cost-effective ways to save energy in a home.

- **Take advantage of clean heating and cooling technologies.**

If your heating or cooling system needs to be replaced, building an addition is a great time to consider clean heating and cooling technologies, like heat pumps. Heat pumps are a safer, more efficient choice for your home with no burning of fossil fuels, need for fuel storage tanks, or potential for carbon monoxide emissions.

Finishing a Basement or Attic

WITH EFFICIENCY IN MIND

If you are finishing a basement or attic, incorporating energy-saving upgrades can help improve your project's return on investment. Consider taking the following energy-saving actions.

- **Find a contractor who specializes in energy-efficient construction.**

If you haven't started your project yet, find a contractor who has invested in training related to energy-efficient and green building practices. Prospective contractors should be able to provide you with examples of projects in which they paired energy performance upgrades with finishing a basement or attic.

- **Choose energy-efficient appliances and water fixtures.**

No matter what type of space the finished basement or attic will serve as, there are energy-efficient appliances and water fixtures that can help you save energy and money. Invest in ENERGY STAR and WaterSense labeled products, which can include clothes washers and dryers, low-flow faucets, televisions, and more.

- **Choose energy-efficient lighting.**

Energy-efficient lighting options include LEDs, timers, motion sensors, and smart switches. Energy-efficient light bulbs use up to 90 percent less energy, cost less to operate, and can last up to 25 years longer than conventional light bulbs. They are also available in a wide array of design options.

- **Improve the energy efficiency of existing windows or upgrade to new ones.**

Heat gain and loss through windows is responsible for 25–30 percent of residential heating and cooling energy use. If your windows are already double-pane glass with a Low-E coating (low heat transfer and loss), you can further improve their energy performance and better manage comfort with the addition of insulated shades or exterior shading devices. If your remodel calls for window replacements, select high-efficiency, ENERGY STAR certified windows for the best performance.

- **Invest in air sealing and insulation upgrades.**

In colder climates like New York, attics and basements should be well insulated to stop heat from escaping your home. Ask your contractor about upgrading insulation and sealing air leakage paths. Air sealing and insulation are two of the most cost-effective ways to save energy in a home.

- **Take advantage of clean heating and cooling technologies.**

If your heating or cooling system needs to be replaced, finishing a basement or attic is a great time to consider clean heating and cooling technologies, like heat pumps. Heat pumps are a safer, more efficient choice for your home with no burning of fossil fuels, need for fuel storage tanks, or potential for carbon monoxide emissions. They also allow for customization and control of the temperature of each room in your home.