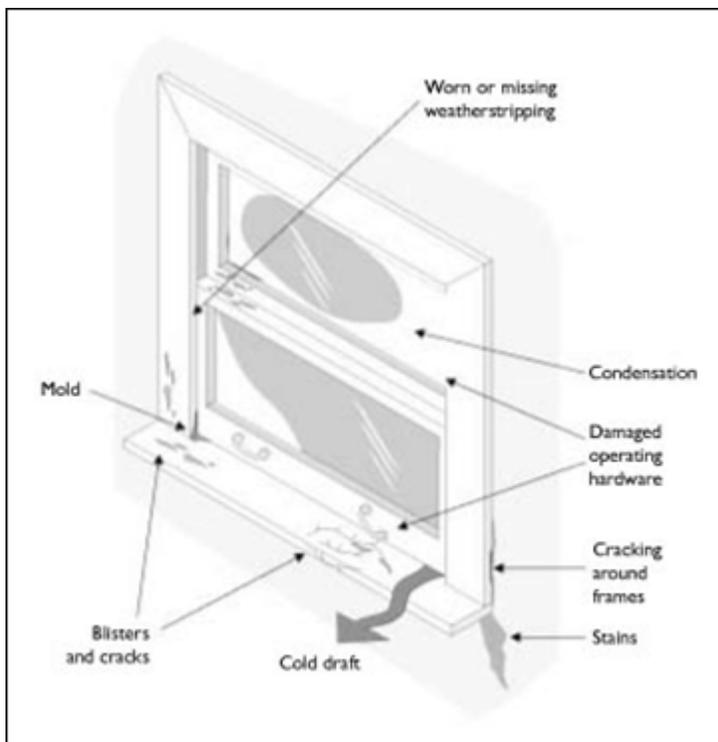


Window and Door Renovations

Windows and exterior doors are subject to the wear and tear that comes from constant use and exposure to the weather. Over time, weatherstripping, hardware and the door and frame materials can deteriorate or fail. Homeowners can either repair or replace window or door units. Repairs can be inexpensive, but may not give good long-term results. Replacement is generally costly, but will provide cost savings in energy use, make your house more comfortable and add to the resale value.



Common Situations

There are a number of factors to consider before making the decision about whether your windows or doors need to be replaced or whether they can simply be repaired.

Some important areas that you will want to consider include:

- **Style and design** — your existing windows and doors may not fit the style of your house or give you the features that you want. There may not be enough glass area to provide adequate natural lighting to the living space.
- **Components and hardware** — the components of windows and doors wear out over time. Failed seals on thermal pane window units, poorly operating windows or doors, damaged screens or hardware and air leaks are common problems. Older door and window hardware may not offer much protection against forced entry.
- **Structural problems** — there may be structural problems that are affecting the operation of doors and windows. Installation of larger units or units in new locations will probably also require structural changes.
- **Moisture** — windows and doors often deteriorate due to moisture problems, which will not necessarily go away if you install new units. In fact, moisture may even get worse, due to reduced air leakage.

- **Heating and ventilation** — the glass area of windows and doors accounts for a high degree of heat loss at night or heat gain when the sun is shining. Energy efficient glazing can reduce heat loss. Heating system modifications or some type of shading may be needed to improve comfort near large window areas.

Healthy Housing™

Renovating is an ideal time to make your house healthier for you, the community and the environment. When assessing your renovation project, be sure to consider the five essentials of [Healthy Housing™](#).

The Five Essentials of Healthy Housing™

The Healthy House is bright, open, energy efficient and welcoming. It can be new or renovated, in downtown or suburbia. Wherever you find it, the Healthy House is characterized by five key elements.

1. **Occupant Health**
Healthy Housing™ promotes superior quality of indoor air, water and lighting.
2. **Energy Efficiency**
Homes account for about 20 per cent of all energy used in Canada. Of this, about 67 per cent is used for space heating and cooling, 18 per cent for lighting and appliances, and 15 per cent for heating water. The Healthy House reduces energy use in all these areas, in all seasons. It minimizes heat loss in winter and gain in summer. It relies on efficient heating and ventilation systems, reduces the consumption of electricity and other fuels, and encourages the use of renewable energy. It also reduces the energy used in the manufacture of building materials and in house construction.
3. **Resource Efficiency**
The Healthy House makes efficient use of all our resources. It is also affordable and adaptable to changing needs. Efficient use is made of building materials, and construction waste is well managed. Durability of building components is essential. The Healthy House conserves resources, especially water and energy.
4. **Environmental Responsibility**
The principles that guide the construction and use of the Healthy House are the cornerstone of environmentally responsible housing. The Healthy House uses alternative water and wastewater systems, encourages site planning that reduces land requirements, promotes resource-efficient landscaping and considers broader community planning issues such as transportation. It involves a new way of thinking about how homes and communities contribute to the health of the planet. Houses are becoming smaller and more space efficient with multi-use floor plans. While building lots are smaller, they are more creatively used.
5. **Affordability**
For the Healthy House to succeed in the marketplace, it must be good for the owner, the builder and future generations. Many features of the Healthy House make it affordable, and its design makes it easily adaptable to its occupants' changing needs. http://www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/heho/heho_001.cfm

House as a System

A house is much more than just four walls and a roof — it's an interactive system made up of many components including the basic structure, heating, ventilation and air conditioning (HVAC) equipment, the external environment and the occupants. Each component influences the performance of the entire system. A renovation provides an opportunity to improve how your house performs.

Tighter and more energy efficient windows and doors will reduce the heating load on your house, reduce heating costs and improve occupant comfort. Energy efficient glazing can also reduce condensation problems that damage finishes and lead to mold growth.

Increased house airtightness can improve energy efficiency, but may also lead to a greater need for mechanical ventilation. A sufficient air supply may also be needed to prevent combustion appliances from backdrafting.

Avoid Surprises

There are many choices available to homeowners who want to upgrade or make changes to the windows or doors in their homes. Taking the time to examine your needs and the options that are available is the right way to start to plan for your renovation or repair job. Here are some of the likely situations that people encounter.

Style and Design



Ask yourself...

- Do the important living areas of your house receive adequate natural lighting?
- Do you have or want windows or doors that connect you with outdoor living areas, interesting landscape features or views?
- Do the windows and doors match the original style of your house?
- Do the windows and doors have the appearance, durability and maintenance requirements that you expect?



Consider your options...

- Increase the glass area. For good natural lighting, glass area needs to be about 10 per cent of the floor space.
- Add windows or doors to connect you with the outside environment. Make sure the weatherstripping prevents or minimizes air and water leakage.
- Choose replacement windows and doors that fit with the original style of the house.
- Select windows and doors that meet your needs. If you are replacing all of the windows and doors, you may want to totally change the look and feel of the house by choosing units of a completely different design.
- Consider the use of a professional designer to help explore your options.



...and if you don't

- Poor natural lighting can detract from your enjoyment of the renovation. If you compromise on your choices you will have to live with the results.
- Adding another door or window later will be more costly and may not fit well with other renovation work that you have done.
- Poor selection can result in windows that look bad, perform poorly or require excessive maintenance. A designer can help to avoid problems such as installing too large a glass area on the sunny sides of the house that can lead to overheating unless sun controls (e.g., large overhangs, awnings or trees) are also included.

Components & Hardware



Ask yourself...

- Are your windows and doors in good operating condition and free from wind or water leakage?
- Are glass surfaces easy to reach for cleaning?
- Are storm windows and screens easy to install and in good condition?
- Are the latches, doorknobs or weatherstripping in good condition?
- Do your doors have security features such as door viewers, deadbolt locks, reinforced striker plates and hinge attachments?
- Is your window hardware adequate to resist forced entry?
- Does each bedroom have a window that allows egress in case of fire?



Consider your options...

- Replace or repair worn out window or door units.
- Choose new window units that open or tilt in for easy cleaning. Familiarize yourself with available products and options. Pay attention to energy efficiency features.
- Replace worn or damaged latches, doorknobs or weatherstripping.
- Install deadbolts on exterior doors. Use door viewers or glazing to give you a clear look at your caller. Install longer screws at hinges or striker plates. Install solid blocking between the jamb and framing at hinge locations and striker plates.
- Install bedroom windows that have openings that meet the National Building Code requirement for egress.



...and if you don't

- Window and door units will continue to be a source of problems.
- You may put yourself and your family at risk.

Structural Problems



Ask yourself...

- Are there existing structural problems that affect your windows and doors?
- Will installation of new windows or doors require special structural details or changes in electrical and plumbing services?



**Consider
your
options...**

- Carry out an inspection to help you understand the cause of any existing structural problems. Look for cracked or binding windows and doors.
- Repair or strengthen structural components so that they are adequate to carry the loads over existing or new openings.
- Consult with an expert to help you with the structural part of the work. Use a licensed tradesperson to disconnect or move any electrical or plumbing services.



**...and if
you don't**

- Structural deficiencies can lead to difficulties in operating windows and doors.
- Other structural problems can show up as cracked finishes or glass, bowing or displacement of walls and roof structures and possible structural failure.
- Structural, electrical or plumbing modifications that are not up to code can be a safety hazard.

Moisture



**Ask
yourself...**

- Is there moisture damage to any of the windows and doors?
- Is there moisture between the two panes of glass?
- Is there visible mold growth on any surfaces? Are there water stains?
- Has there been condensation on glazing, jambs or sills?
- Is there blistering or peeling paint?
- Is any of the caulking cracked or missing?
- Are the flashings in good repair?



**Consider
your
options...**

- Determine the source of the moisture. It may be from building leaks or condensation of vapour on cold surfaces.
- Replace the sealed unit.
- Modify or move curtains, plants or window screens that are keeping warm air from getting to the window surface.
- Clean up visible mold growth according to CMHC guidelines.
- Insulate, air-seal or use energy efficient glazing to provide warmer inside surface temperatures.
- Provide ventilation and eliminate sources of moisture to control high humidity.
- Replace or repair all deteriorated finishes or structural components.
- Maintain caulking and flashings to prevent water access to the building structure.



**...and if
you don't**

- Unsolved water damage problems will continue and lead to further deterioration of the building or newly renovated areas.
- A broken seal will allow moisture to build up between the panes, reducing the window efficiency and possibly causing breakage.
- Mold growth caused by excess moisture can be a serious source of IAQ problems.
- Superficial cleanup or hiding moisture damage behind new finishes will allow deterioration to continue.

Heating & Ventilation



**Ask
yourself...**

- Do large areas of glass make the room uncomfortable and hard to heat?
- Does excess condensation form on windows or other surfaces?
- Do large areas of glass lead to overheating from the sun's energy?



**Consider
your
options...**

- Make sure that there is adequate heating supplied to the area. Poor insulation levels and high air leakage will make the area hard to heat, drafty and uncomfortable.
- Use energy efficient glazing. In some cases, you may need to install additional ventilation to reduce indoor humidity levels. If you are installing a whole house ventilation system, consider one that includes heat recovery.
- Use a licensed installer for heating and ventilation work.
- Install blinds or exterior shading to control overheating from the sun and damage to interior finishes.



**...and if
you don't**

- The heating system may not be able to maintain a comfortable temperature in the living space during cold windy weather.
- Condensation may damage your work.
- The sun may overheat the living space.

Rewards

- Your window and door repair or replacement can provide you with units that are easy to operate, free from condensation and energy efficient.
- Additional glass area can result in bright, well-lit living spaces.
- You can improve the security and safety of your home.

Skills to do the Job

A homeowner with good fix-it skills may be able to do some of the work on the repair or replacement of windows and doors such as:

- Replacing hardware or weatherstripping.
- Repairing caulking or flashing.
- Installing insert type window replacements.

Consider hiring a professional renovator for structural changes, finish work or complete project management. If you are doing the changes yourself, you will still need to hire subcontractors to carry out the electrical, plumbing, heating and ventilation work. Remember to obtain all necessary permits, ensure that workers use safe practices and are covered by workers' compensation. Protect yourself, your family and your home.

Use the Window and Door Assessment Worksheet to record the present condition, any window or door problems, proposed upgrades and preliminary costing.

Window and Door Assessment Worksheet			
	Present Condition / Problems	Upgrades	Costs
Window Size			
Sliding or Ease of Opening			
Hardware Operation			
Glass			
Weatherstripping			
Caulking & Flashing			
Evidence of Moisture Damage			
Condensation on Glass (During Winter)			
Fogging or Condensation Between Glass Panes or Sealed Units			
Door and Frame			
Window and Door Finishes			
Other			