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ABOUT YOUR HOUSE

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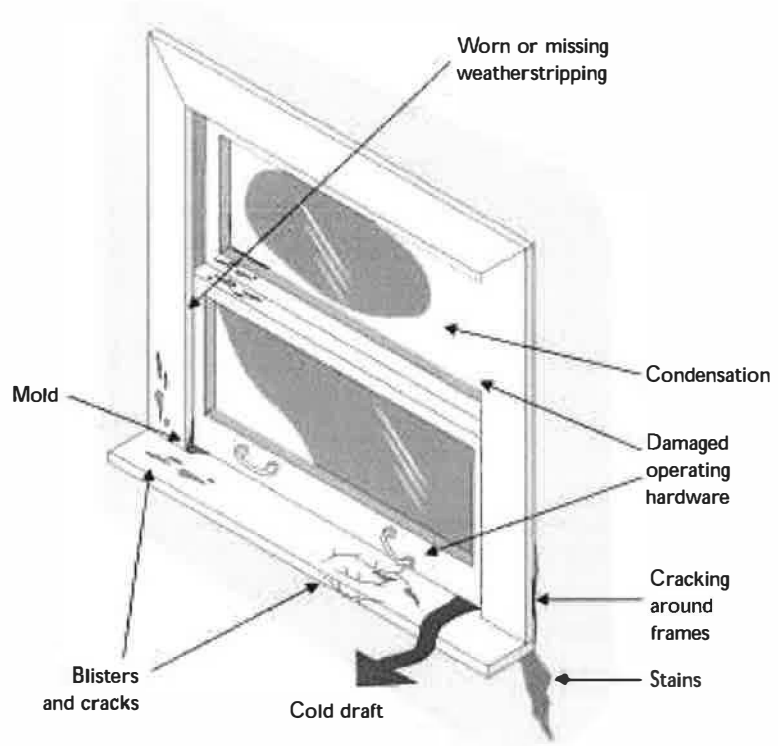
BEFORE YOU START WINDOW AND DOOR RENOVATIONS



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.

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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 making changes to windows and exterior doors, be sure to consider:

- **Occupant health**—high performance windows to reduce condensation that contributes to mold growth, designs for natural light.
- **Energy efficiency**—glazing units with low-emissivity (Low-E) coatings and gas fills, window units with insulated spacer bars and frames, insulated door units to reduce heat loss, design to maximize solar benefits.
- **Resource efficiency**—durable materials, high performance windows and insulated doors to reduce energy use.
- **Environmental responsibility**—durable materials that will last longer and minimize future waste in landfill sites, proper disposal of hazardous waste such as lead paint on windows.
- **Affordability**—energy efficient windows and doors to reduce ongoing operating costs, durable products to reduce future repair and replacement expenses.

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.

Ask yourself...	Consider your options...	...and if you don't
Style and design		
• Do the important living areas of your house receive adequate natural lighting?	• Increase the glass area. For good natural lighting, glass area needs to be about 10 per cent of the floor space.	• 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.
• Do you have or want windows or doors that connect you with outdoor living areas, interesting landscape features or views?	• Add windows or doors to connect you with the outside environment. Make sure the weatherstripping prevents or minimizes air and water leakage.	• Adding another door or window later will be more costly and may not fit well with other renovation work that you have done.
• Do the windows and doors match the original style of your house?	• Choose replacement windows and doors that fit with the original style of the house.	• 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.
• Do the windows and doors have the appearance, durability and maintenance requirements that you expect?	• 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.	

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.

Ask yourself...	Consider your options...	...and if you don't
Components and hardware		
• Are your windows and doors in good operating condition and free from wind or water leakage?	• Replace or repair worn out window or door units.	• Window and door units will continue to be a source of problems.
• Are glass surfaces easy to reach for cleaning?	• 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.	• You may put yourself and your family at risk.
• Are storm windows and screens easy to install and in good condition?	• Replace worn or damaged latches, doorknobs or weatherstripping.	
• Are the latches, doorknobs or weatherstripping in good condition?	• 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.	
• 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?	• Install bedroom windows that have openings that meet the National Building Code requirement for egress.	
Structural problems		
• Are there existing structural problems that affect your windows and doors?	• Carry out an inspection to help you understand the cause of any existing structural problems. Look for cracked or binding windows and doors.	• Structural deficiencies can lead to difficulties in operating windows and doors.
• Will installation of new windows or doors require special structural details or changes in electrical and plumbing services?	• Repair or strengthen structural components so that they are adequate to carry the loads over existing or new openings.	• Other structural problems can show up as cracked finishes or glass, bowing or displacement of walls and roof structures and possible structural failure.
	• 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.	• Structural, electrical or plumbing modifications that are not up to code can be a safety hazard.

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.

Ask yourself...	Consider your options...	...and if you don't
Moisture		
• Is there moisture damage to any of the windows and doors?	• Determine the source of the moisture. It may be from building leaks or condensation of vapour on cold surfaces.	• Unsolved water damage problems will continue and lead to further deterioration of the building or newly renovated areas.
• Is there moisture between the two panes of glass?	• Replace the sealed unit.	• A broken seal will allow moisture to build up between the panes, reducing the window efficiency and possibly causing breakage.
• Is there visible mold growth on any surfaces? Are there water stains?	• Modify or move curtains, plants or window screens that are keeping warm air from getting to the window surface.	• Mold growth caused by excess moisture can be a serious source of IAQ problems.
• Has there been condensation on glazing, jambs or sills?	• Clean up visible mold growth according to CMHC guidelines.	• Superficial cleanup or hiding moisture damage behind new finishes will allow deterioration to continue.
• Is there blistering or peeling paint?	• Insulate, air-seal or use energy efficient glazing to provide warmer inside surface temperatures.	
• Is any of the caulking cracked or missing?	• Provide ventilation and eliminate sources of moisture to control high humidity.	
• Are the flashings in good repair?	• Replace or repair all deteriorated finishes or structural components.	
	• Maintain caulking and flashings to prevent water access to the building structure.	
Heating and ventilation		
• Do large areas of glass make the room uncomfortable and hard to heat?	• 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.	• The heating system may not be able to maintain a comfortable temperature in the living space during cold windy weather.
• Does excess condensation form on windows or other surfaces?	• 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.	• Condensation may damage your work.
• Do large areas of glass lead to overheating from the sun's energy?	• Use a licensed installer for heating and ventilation work.	• The sun may overheat the living space.
	• Install blinds or exterior shading to control overheating from the sun and damage to interior finishes.	

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 Assessmennt Worksheet			
	Present condition/problems	Proposed upgrades	Cost
Window size			
Sliding or ease of opening, hardware operation			
Glass			
Weatherstripping			
Caulking and flashing			
Evidence of moisture damage			
Condensation on glass surface (during winter)			
Fogging or condensation between glass panes on sealed units			
Door and frame			
Door security features			
Window and door finishes			
Other			

Costing Your Project

The cost of the renovation work will depend on the condition of the existing windows and doors, local labour and material costs and the extent of the work to be done. The cost of doors and windows varies widely. A good budget checklist will help you to develop a realistic cost for the project before you start. Some of the items to include are:

- ❑ Design changes.
- ❑ Structural considerations.
- ❑ Components and hardware.
- ❑ Moisture damage and deteriorated finishes.
- ❑ Plumbing and electrical problems.
- ❑ Heating and ventilation.
- ❑ Permit and inspection costs
- ❑ Waste disposal.

Other useful information from Canada Mortgage and Housing Corporation

Clean-Up Procedures for Mold in Houses 6753E $3.95
Healthy Housing Renovation Planner 2172E $34.95
Homeowner's Inspection Checklist 2444E $19.95
Renovator's Technical Guide 6993E $34.95
Tap the Sun: Passive Solar Techniques and Home Designs 2000E $39.95

About Your House fact sheet, Free
Measuring Humidity in Your Home, CE 1
After the Flood, CE 7
Fighting Mold, CE 8
How to Hire a Contractor, CE 26
Before You Start Renovating Your Basement—Structural Issues and Soil Conditions, CE 28b

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