

YOUR NEW HOME

A Guide to Healthy Living
&
Environmental Cost Savings



Clean Calgary Association
Environmental Education, Products & Services

ACKNOWLEDGEMENTS

Clean Calgary Association would like to acknowledge and thank

Dr. Tang Lee, Professor of Architecture,
Building Science and Environmental Health,
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Stephen Farrell, Owner,
VerdaTech Inc, Energy Management & Consulting

for their contribution to this project.



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YOUR NEW HOME

A Guide to Healthy Living and Environmental Cost Savings

Buying or Renting a New Home?

Improved Home Health and Cost Savings

through

Energy Efficiency
Indoor Air Quality
Water Conservation
& Waste Management

This project is made possible through a grant from the
Alberta Real Estate Foundation



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HOW TO USE THIS GUIDE

You're looking for a new home and want to make an informed decision. We live in the age of the informed consumer and there is a tremendous amount of information available. This guide simplifies the task of determining the energy efficiency, indoor air quality, water conservation, and waste management features of a prospective home. This will enable you to identify homes that offer a healthy living environment for your family and below average operating costs.

Home Energy Efficiency

This section will assist you in assessing the operating costs and energy efficiency of your home. Above average energy efficiency will reduce the month to month operating expenses of your home with the additional benefits of improving comfort, indoor air quality, conserving Alberta's natural resources, and reducing environmental impact.

Home Energy Use

According to a 2005 residential energy use study, home energy is used in five ways¹:

- 66% space heating
- 20% water heating
- 10% appliances
- 4% lighting
- <1% space cooling

Terminology

The **Building Envelope** is the external shell between inside and outside: walls, including basement walls, doors, windows, ceilings, and floors.

Mechanical systems is the heating system: furnaces and boilers.

Ventilation is the capacity to bring fresh air into the house and exhaust stale air: bathroom and kitchen fans, and in some cases heat recovery ventilators (HRV) which recover heat from the exhausted stale air.

Your Home is a "System". Natural Resources Canada suggests that you think of your home as a "system". Many factors (moisture levels, air flow, and heat flow) affect the efficiency and comfort of your home.

In order to keep these in the right balance, the entire home should be considered a system of interdependent parts, structures, and equipment.

Leaking and Breathing - Keep in mind that you want a home that doesn't leak, causing draughts and high utility bills, but you definitely want a home that "breathes", effectively expelling moisture and stale air to ensure good indoor air quality and avoid mould growth.



How to use the Energy Efficiency Section of the Guide

The energy efficiency section is useful for both prospective renters and buyers, however buyers will have additional considerations (noted below) as they will be responsible for the home's insulation, furnace, hot water tank, doors, and windows. The term "agent" refers to landlords and realtors.

Buyers and Renters

There are several programs that serve to evaluate a home's energy efficiency as well as other environmental attributes. The first thing to ask the agent is whether the home has an EnerGuide for Houses rating (see page 14), qualifies for one of Built Green's four achievement levels, or qualifies for R-2000 certification.

What is Built Green?

Built Green™ is a voluntary program, owned and managed by the Built Green™ Society of Canada, that promotes and recognizes the use of practices and products that represents resource-efficient and environmentally friendly construction.

The primary purpose of Built Green™ is to encourage homebuilders to use technologies, products and practices that will:

- Provide greater energy efficiency and reduce pollution

- Provide healthier indoor air
- Reduce water usage
- Preserve natural resources
- Improve durability and reduce maintenance

There are three Built Green™ achievement levels: bronze, silver, gold and platinum (highest).

R-2000 Standards

Natural Resources Canada has developed the R-2000 Standards to encourage home building based on principles of energy efficiency, indoor air quality, and occupant health. An “R-2000 Home” meets the R-2000 Standards for energy efficiency and is approximately one third more energy efficient than other homes.

How do I know if a home meets R-2000 Standards? R-2000 homes that are built by trained R-2000 builders and successfully certified by a third-party professional will receive an R-2000 certification from Natural Resources Canada. Ask your selling/leasing agent for this certification.

Does an R-2000 home cost more? R-2000 homes may cost between 2 and 4 percent more than other homes, but they offer a good investment in terms of lower utility cost, occupant health, and resale value.

Home Energy Efficiency Check List

- ☐ **Yes/No** - The home has an EnerGuide rating.
_____ Energuide rating.
- ☐ **Yes/No** - The home qualifies for a Built Green™ achievement level.
_____ Built Green™ achievement level.
- ☐ **Yes/No** - The home is certified R-2000.

The Size and Style of your Home make a Difference

The size and style of your prospective home indicate whether it is “typical” or whether you can expect to have above or below average energy consumption.

When you are looking for a new home, remember that the bigger the home, the more energy will be required to heat, cool, and light the living space.

Also, a home with many big windows will result in a larger proportion of heat loss. Smaller homes use less energy,

which means lower utility bills for the resident. The style of your house also has energy implications – apartments and attached homes use an average of 27% less energy than single, detached homes.



Average Size of Homes by Type in Alberta (2005)

Housing Type	Square Feet (ft ²)	Square Metres (m ²)
Single Detached	1,444	134
Single Attached	1,209	112
Apartment	919	85
Mobile Home	1,062	99

Types of homes

- Single Detached – no common floor, walls, or ceilings.
- Single Attached – no common floors or ceilings, one or two common walls.
- Apartment – common floor or ceiling and/or common walls.
- Mobile home – no common floor, walls, or ceilings.

Home Specifics: Age, Type, and Size

- ☐ How old is the home? _____
- ☐ What type of home is it? _____
- ☐ Size of the home, not including the basement

- ☐ Is your home above or below average size for its type?

Determine Operating Costs: Utilities

Utility bills are the best indicator of future operating costs. You should start by collecting some easy-to-attain information about the amount of energy that your home uses. The price of energy fluctuates and rebates can change; therefore to determine energy efficiency it is vital to determine how much energy the home uses rather than simply the amount of utility bills.



- ☐ Ask your agent for utility bill information for the last 12 months (there may be an additional cost of obtaining information going back further than 12 months.) Once you have the information, you should determine two things: electricity usage (kilowatts) and natural gas usage (gigajoules).
- ☐ Electricity usage – how many kilowatt hours used per year?

- ☐ Natural gas – how many gigajoules used per year?

Determining Your Home's Energy Efficiency: Average? Below Average? Above Average?

Compare the previous year's electricity and natural gas bills that you have collected for your prospective home to the yearly energy consumption of an average-sized home of its type (see page 10). If your home is smaller or larger than average, you can expect to see corresponding variances in the energy and electricity consumed.

Annual Energy Use by Housing Type (2005)

Housing Type	Annual Electricity Use (kWh)	Annual Natural Gas Use (GJ)
Single Detached*	7,453	140
Single Attached**	4,720	89
Apartment***	3,583	67
Mobile Home****	7,013	132

* Based on 1,444 sq ft or 134 sq m (average single detached home in Alberta)

** Based on 1,209 sq ft or 112 sq m (average single attached home in Alberta)

*** Based on 919 sq ft or 85 sq m (average apartment in Alberta)

**** Based on 1,062 sq ft or 99 sq m (average mobile home in Alberta)

Energy Consumption Indicator

Considering its type and relative size, if you see significant discrepancies with your prospective home's electricity or natural gas bill, consider that

- Most electricity is used for appliances with much smaller amounts used for light and space cooling.
- 66% of all natural gas is used for space heating and 20% for water heating.

This will help you determine where either electricity or natural gas is being wasted or conserved.

Seasonal Natural Gas Consumption

Natural gas consumption varies according to the season. The average Alberta home will use 135 gigajoules of natural gas per year broken down monthly as follows, with a peak in December/January and lows in June/July.

January	23 gigajoules	May	5 gigajoules	September	5 gigajoules
February	18 gigajoules	June	3 gigajoules	October	9 gigajoules
March	16 gigajoules	July	3 gigajoules	November	18 gigajoules
April	9 gigajoules	August	4 gigajoules	December	22 gigajoules

Other Energy-related Considerations

Ventilation System

☐ **Yes/No** - Does the home have operating bathroom fans that exhaust to the outdoors?

Please note that some bathroom fans exhaust moisture to the attic.

☐ **Yes/No** - Does the home have operating kitchen fans that exhaust to the outdoors?

Please note that some kitchen fans recirculate stale air in the home rather than exhausting air to the outdoors.

Humidifier

☐ **Yes/No** - Does the home have a working humidifier?

Please note that humidifiers may need annual maintenance for optimal operation. If your home has the correct balance of humidity, your home will use less energy. Low humidification in your home may dry out wood furniture, leather, and paintings.

Programmable Thermostat

☐ **Yes/No** - Does the home have a functioning programmable thermostat?

A programmable thermostat will save energy and lower your utility bill by automatically adjusting your home's temperature when no one is at home or when you sleep. Programmable thermostats are more accurate than manual thermostats.



High Efficiency Appliances

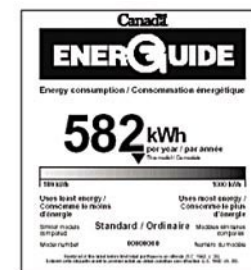
If your home comes with appliances, there are some simple ways to determine if the appliances are energy efficient. Check your refrigerator, freezer, clothes washer, clothes dryer, and dishwasher for the Energy Star label and/or an EnerGuide rating label.



Appliances labeled **Energy Star** are the top performers in their market. They are required to meet strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and the U.S. Department of Energy.

☐ **Yes/No** - Appliances have Energy Star label.

The **EnerGuide** label, based on Canadian Standards Association test data, indicates how much energy an appliance consumes in a year of normal service. Seek an appliance with an arrow towards the left indicating the highest level of efficiency and lowest operating cost.



☐ **Yes/No** - Appliances have EnerGuide label, with arrow towards the left.

Additional Considerations for Home Buyers

Insulation – Basement Walls

In an average home, 15% of heat escapes from the basement. If there is no insulation in the basement you should allow for basement insulation installation.

☐ **Yes/No** - Are the basement walls insulated with four or more inches of insulation?

Furnace/Boiler

☐ Determine the type of heating system

Options: boiler, standard efficiency furnace, mid-efficiency furnace, high-efficiency condensing furnace.

☐ Determine the age of the heating system: _____ years-old.

TIP: You can determine the age from the serial number or inspection stickers.

If the furnace is more than 20 years old, you should budget at least \$3,000 to replace it. If the furnace is less than 20 years old, you likely have a mid-efficiency (78-84% efficient) or high-efficiency condensing furnace (90% efficient). You can determine if the furnace is high efficiency by checking if it has a PVC flue pipe (ask the realtor if you aren't sure).



Hot Water Tank

Is the hot water tank older than 12 years old? If so, you should budget to replace it.

☐ Determine the age of the hot water tank: _____ years-old.

Insulation - Attic



Before going into the attic, ask the agent how much insulation is in the attic (recommended 12 to 14 inches). Also, if the home was built prior to 1990, ask the agent if there is vermiculite insulation in the attic. Please refer to Health Canada for more information about vermiculite.

☐ **Yes/No** - Is the attic sufficiently insulated?

☐ **Yes/No** - Is there vermiculite insulation in the attic?

Wall insulation

Here is a guideline based on the age of the home:

- If the home was built in 1990 or afterwards, the insulation is likely 2x6 (stud size), R20.
- If the home was built between 1975 and 1990 the insulation is likely 2x4, R12.
- If the home was built between 1965 and 1975 the insulation is likely 2x4, R8.
- If the home was built before 1965 the insulation could be anything. A home of this age requires further investigation.



☐ Determine the level of wall insulation.

“R” Value is a scaling system of how quickly energy will transfer from one space to another. Typically a wooden door is R-2; an insulated steel door is typically R-7. The higher the R value, the more highly insulated your home is.

Doors

Insulated steel doors provide a higher R value than wood doors.

☐ **Yes/No** - Does the home have insulated steel doors for any exterior doors?

Windows

☐ **Yes/No** - Does the home have double glazed windows?



Federally Subsidized Energy Efficiency Programs

Many of the energy issues discussed here are addressed through a federally subsidized program that underwent changes in 2006 and 2007. This section aims to clarify what was formerly and what is currently available to homeowners.

Formerly **EnerGuide for Houses Retrofit Incentive Program**

Hundreds of thousands of Canadians had their homes analyzed for energy efficiency and received expert advice and a detailed energy assessment recommending energy upgrades tailored to their home. When requested, the experts returned for a follow-up evaluation to determine if upgrades undertaken by the homeowner were effective and qualified for a grant. *Please note that a high percentage of homes built recently are EnerGuide rated.*

The federal government paid half of the cost of the energy assessment and provided grants for specific and verified home energy upgrades.

This program was discontinued in May 2006. To conclude this program, post-upgrade visits were carried out until February 2007 for grants available until March 2007.

Current **ecoENERGY Retrofit – Homes Program**

Launched on April 1, 2007, the ecoENERGY Retrofit Program is the mechanism by which the federal government now provides homeowners with financial support to implement energy saving projects. Through this program the federal government does not subsidize the energy evaluations and visits conducted by energy experts, however it does provide grants for specific and verified home energy upgrades.

- This program is available to owners of single family homes (detached, semi-detached and low-rise multi-unit residential buildings included).
- The maximum grant per home or multi-unit residential building is \$5,000. The total grant amount available to one individual or entity for eligible properties over the life of the program is \$500,000.
- This program is scheduled to end on March 31, 2011.

According to the program's website, "(t)he first step in participating in ecoENERGY Retrofit – Homes is to call for a professional energy assessment provided by an energy advisor licensed by Natural Resources Canada (NRCAN). The advisor will perform a pre-retrofit assessment of the home and provide you with your own personalized action checklist of upgrades that will reduce your energy consumption."

For detailed information and to find an NRCAN licensed energy advisor in your area

- go to www.oeenrcan.gc.ca, go to "grants and incentives" then "ecoEnergy Retrofit – Homes" or
- call 1-800-O-Canada (1-800-622-6232) or 1-800-926-9105 for the hearing impaired.

Please note that the cost of an energy assessment varies among the service providers and is subject to change. To give you an idea of price of an evaluation and follow-up visit (to verify upgrades), a cost survey conducted in 2008 found that initial assessments range from \$250 plus GST to \$275 plus GST, with follow up visits ranging from \$99 plus GST to \$150 plus GST.

Please note that an Energy Expert is not the same as a Home Inspector who assesses the structural integrity of a home.

Rebate for Albertans

As of April 2008, all Albertans who participate in the ecoEnergy government grant initiative will receive a \$200 rebate from the provincial government at the time of the follow-up evaluation.

Energy Efficiency, the Environment, and Health

Almost half of Alberta's electricity capacity is generated with coal and almost 40 percent from natural gas. Both coal and natural gas are fossil fuels.²

How does burning fossil fuels affect our air quality and health?

The burning of fossil fuels changes the chemical composition of the atmosphere, produces acid rain and contaminates the air with mercury, sulphur, and oxides of nitrogen. Polluted air is a contributing factor of a range of respiratory ailments including asthma.

Indoor Air Quality

Why is Indoor Air Quality Important?

Canada Mortgage and Housing Corporation, several leading U.S. authorities, and others have consistently identified indoor pollution as posing one of the most serious health risks. In the U.S. indoor pollution is estimated to have caused thousands of cancer deaths and hundreds of thousands of respiratory health problems each year.³

When selecting a home, you will need to be proactive about assessing the indoor air quality as Canadian government policy on indoor environments is limited and fragmented.⁴

Your health and that of your family is directly linked to the indoor air quality in your home. When seeking a home, it is vitally important to consider that homes contain many substances that may be hazardous to health. Canadians spend an average of 90% of their time indoors, during which time they may be continually exposed to toxic gases, moulds, and particles harmful to health.⁵ Toxic indoor air has been linked to both short-term and long-term effects including eye and throat irritation, allergies, childhood asthma, respiratory diseases, emphysema, chemical sensitivity in adults and cancer.

Exposure to high levels of some pollutants, such as carbon monoxide, can even result in immediate death. Some indoor pollutants can magnify the effects of other indoor pollutants. Based on cancer risk alone, federal scientists in the United States have ranked indoor air pollution as one of the most important environmental problems in the U.S.⁶ To date, very little testing has been performed on chemicals used in building materials to determine their effect on humans. Long-term exposure to an unhealthy indoor environment can compromise your immune system, making you more susceptible to other contaminants. This is referred to as “multiple chemical sensitivity”.⁷

Indoor air pollutant levels are often higher indoors than outdoors and can accumulate rapidly, particularly if the pollutants originate inside the home. Long-term exposure of even low levels of contaminants is a concern. Further, the way a home is constructed can prevent indoor pollutants escaping to the outdoors.⁸

Indoor Air Quality Terminology

Sick Home Effects – describes a home in which people experience adverse health effects that can not be attributed to a specific illness or cause.⁹

Barrel Effect – the concept that toxins continually build up in our bodies, each of us with different levels of sensitivity. At some point, if exposed to too many/different toxins, our body will react in the same way a barrel fills, then overflows.

Off-gassing – the continual release of toxic chemicals and carcinogens. In terms of homes, off-gassing is particularly severe in a building’s first ten years.

Volatile Organic Compounds (VOCs) – chemicals that evaporate easily at room temperature. The term “organic” indicates that the compounds contain carbon. Both odorous and non-odorous exposures can be harmful. There are thousands of different VOCs produced and used in our daily lives. **Sources of VOCs:** Paints, varnishes, solvents, cleaning chemicals, vinyl floors, carpets, upholstery fabrics, adhesives, sealing caulks, and pressed wood furniture.

Potential Health Effects of Exposure to VOCs: Acute eye irritation/ watering, nose irritation, throat irritation, headaches, nausea/vomiting, dizziness. Chronic: cancer, liver damage, kidney damage, central nervous system damage.

Factors that Affect Indoor Air Quality

The indoor air quality of a home is determined by the number and type of pollutant sources, the indoor-outdoor ventilation system, and the interior air flow.

Common indoor pollutant sources

- Off-gassing from building materials, finishes and furniture
- Incomplete combustion in heating systems and other equipment
- Mould
- Gas Appliances
- Carpet
- Insulation
- Paint
- Caulking
- Adhesives
- Solvents
- Soil treatments
- Glues
- Pesticides
- Wallpaper
- Durable press fabrics
- Fireplaces
- Wet or moist structure
- Fireproofing
- Dry-cleaning

The Ideal Home has Healthy Indoor Air

Ideally, you are looking for a home that has been built with non-toxic building materials using proper construction techniques. Preferably, your family will not be exposed to chemicals including formaldehyde in insulation and particleboard, VOCs from adhesives, sealants and paints, pesticides, fungicides, and heavy metals used to treat wood. You want a home that breathes, is resistant to mould and rot, and does not emit toxic gasses. Passive and active (mechanical) airflow, daylighting, fresh air exchange (through proper placement of windows and doors) is the best case scenario.

It is strongly advised that highly toxic and combustible materials (items usually stored in the garage and utility room) be kept away from bedrooms and primary living spaces. The cleanest room in a house should be the bedroom.

What to Ask and Look For

The most effective way to protect your family and yourself from indoor air pollution is to prevent or minimize the release of pollutants indoors in the first place.¹⁰ This can be challenging because although indoor pollutants may affect your health, in many cases you won't be able to see, smell, touch, or taste them. You will need to do some detective work to find out the health of the home you are looking at.

To assess the air quality of the home you will need to:

- Determine and assess all sources of indoor air pollution.
- Determine if the indoor-outdoor ventilation is adequate.
- Determine if air flow within the home is adequate.

Principal Sources of Indoor Air Pollution

Carpet



Carpet can be a potentially serious and significant pollution source. In terms of air quality, it is strongly recommended that you select a home without any carpet. Throw rugs are fine if they do not contain too many petrochemical substances. Otherwise, determine how feasible it is to remove the carpet keeping in mind that carpet removal

must be done carefully so that residents are not exposed to toxic chemicals. You will also want to avoid vinyl sheet flooring.

Why is carpet a health hazard?

Chemical Off-gassing

A blend of toxic chemicals that may adversely affect health is commonly used to manufacture carpet. These chemicals (from carpet material and adhesives) will off-gas in your home. Carpet manufacturers normally advise that carpet chemicals will off-gas mainly in the first 3 days after installation. Carpets will also likely off-gas for an indeterminate period afterwards.

Chemical Sink

The fibrous nature of carpet makes it an effective trap for contaminants tracked-in from the outdoors. Such pollutants including dust, pesticides, lead, heavy metals, mould spores, to name a few, can be ground in, invisible to the naked eye, and difficult to clean. Vacuuming may be largely ineffective in removing the finest particles, particularly without a central vacuum system that exhausts to the outdoors.

Mould

If carpet becomes damp/wet and is not dried completely within 24 hours, it is subject to mould, a potentially serious health hazard. Please see the section about mould on page 21 for further information.

Alternatives to Carpet

The healthiest alternative to carpet is ceramic tiling, followed in order of preference by pre-finished solid hardwood, cork, and vinyl. No matter what kind of flooring you select be sure to research and determine whether or not it is made and installed with toxic chemicals and whether they will off-gas (water-based, low toxicity finished flooring and adhesives are preferable). Keep in mind that any flooring will hold contaminants if not properly cleaned and maintained.

Nowadays, if you shop around and ask the right questions, you may be able to find some new carpet on the market that does not off-gas. However, it is unlikely that the home you are looking at has carpet that does not off-gas/has not off-gassed.

Mould

- Mould is a symptom of some potentially serious problems in the home such as water damage and/or energy inefficiency due to structural problems; and
- Mould is a potentially serious health hazard.

There are more than 100,000 species of mould, a very small percentage of which has been identified. Some moulds are known to be toxic, producing mycotoxins, and may be very harmful to health, particularly the health of those who are more susceptible to such pollutants – the young, the old, and those with weakened health. Should you discover mould in a prospective home you should very carefully consider if you want to take on the associated risks.

If I find mould in a prospective home, how do I get it tested to determine if it is toxic?

You will have to find a private laboratory (check the yellow pages) that does residential mould testing and will identify the genus and species of the mould – be sure to confirm this before testing as the names of the species is necessary to determine if the mould is toxic. Some laboratories require that you bring the samples to them for testing, while others will come and take the sample themselves. Either way, the cost will likely be more than \$500. Once you have the species of the mould in hand, you should contact an Air Quality Specialist through Alberta Health Services to determine if the species in question is a health hazard.

What to look for and ask...

- ☐ Using your sense of smell, check carefully and methodically for musty/mildewy odours for indication of mould. *For an effective “smell test” ask the agent showing you the home not to use any fragrances to freshen the air prior to your arrival.*
- ☐ Using your sense of sight, check carefully and methodically for standing water, leaks, condensation, stains, cracks, and any other indication of water damage.
- ☐ Crawl space is susceptible to mould, be sure to check this area thoroughly.

- ☐ Ask the showing agent for a full history of the dwelling, including any water damage.

Ventilation

The ventilation in your home is vital to ensure that stale and contaminated air is pushed outdoors and the fresh air is brought in.

Start by taking a look around the outside of your home.

Air Intakes

- ☐ Check that the air intakes on the outside of the building are at least a metre from the ground.

Why? Air intakes that are very low to the ground are subject to the intake of mould spores from soil, snow, and dust.

- ☐ Check to ensure that the air intakes are not aligned with the air exhausts of neighbouring homes.

Why? Your intakes may suck in stale and contaminated air from neighbouring homes.

- ☐ Check that there isn't a lot of garbage left around neighbours' homes.

Why? Loose garbage may contaminate your home's site and potentially expose your air intakes to contaminants or blockages.

Indoor Ventilation

Areas in your home where there is cooking, moisture, contaminants and/or chemicals, particularly the kitchen and bathrooms, should be well ventilated to the outdoors.

Important: Some ventilation systems suck the air out of a space and simply push it back into the same space, effectively re-circulating stale air in your home. Although some such ventilation systems purport to filter the air prior to re-circulating it, many filtering systems are effective for an extremely short period of time, requiring frequent cleaning and parts replacement. It is far more effective – and convenient – for the ventilation system to exhaust to the outdoors.

Does an outdoor ventilation system let in cold air?

No, a properly designed exhaust system does not permit air to enter the home.

Air Exhaust

Kitchen

- ☐ Hold a piece of paper to the kitchen exhaust fan to find out if it is effectively sucking air out of the room. (Some exhaust fans are noisy but not effective).
- ☐ Ask to see where the kitchen fan exhausts to the outdoors to ensure that stale, moist air is indeed expelled from the building. This is also an opportunity to satisfy yourself that the exhaust system is functioning properly and does not allow air into the home.

Bathroom

- ☐ Hold a piece of paper to the bathroom exhaust fan to find out if it is effectively sucking air out of the room. (Some exhaust fans are noisy but not effective).
- ☐ Ask to see where the bathroom fan exhausts to the outdoors to ensure that stale, moist air is indeed expelled from the building. This is also an opportunity to satisfy yourself that the exhaust system is functioning properly and does not allow air into the home.

Chemical Soup

The clothes in our closet, the food in the pantry, the cleaners under the sink, and the items in storage are made with chemicals that off-gas (please see page 17) into our homes. Ideally any and all “chemical soup” areas in the home should be ventilated to the outdoors to ensure that chemicals and contaminants do not build up and continually circulate in your living space.

- ☐ Check all the areas where you would be storing items that “off-gas” to see if any of the spaces in question are effectively ventilated to the outdoors, or could be modified to do so.

Central Vacuum System vs. Upright or Canister Vacuum

A central vacuum system – where a vacuum hose plugs into a central system in various rooms in the home – with a fully functioning outdoor exhaust is by far the most effective way to eliminate potentially dangerous dust and air particles.

You Should Know

The finest dust particles, those we cannot see with the naked eye, are among the most dangerous to our health. These fine particles will escape easily through the pores of an upright or canister vacuum bag - free to enter the nose, throat, and respiratory system of residents. Though invisible to the naked eye, exposure to these air borne particles can over short or long periods of time cause serious health effects.



Although some upright and canister vacuums are now available with filter systems, this technology can be problematic. Poorly designed vacuums have high powered suctioning and poor seals. In such models, air may pass the filter making the filtering ineffective.

What to look for...

- ☐ Check that the home has a central vacuum system.
- ☐ Check that the suction and air flow functions of the vacuum system are fully functioning.
- ☐ Check that the vacuum system effectively exhausts to the outdoors.

In some homes, the central vacuum system exhausts to the basement, which means that air contaminants are continually re-circulating within your home rather than being expelled. This could be a serious indoor air quality hazard.

VOCs and Off-gassing

- ☐ Check that all surfaces and edges of formaldehyde-based particle board products are laminated or sealed to reduce offgassing. Hardwood and softwood cabinets and furniture and solid surface countertops have fewer toxic characteristics than composite or synthetic materials.
- ☐ Many paints, stains, sealants, and adhesives have high levels of VOCs. Check for the healthier option – ceramic flooring or vinyl composition flooring tiles that are pre-glued or have water-based adhesives.

Home Water Efficiency

Water conservation saves money, water, and the energy used by water and wastewater treatment plants.

Toilets, baths, showers, and laundry are the biggest water users in your home. To ensure that your water utility bill is as low as possible, you will want to ensure that there are no water leakages and that your water appliances are as efficient as possible.

Average Water Usage

Each person uses 5000 – 8000 litres of water per month (in metered homes).

100 % of Edmonton homes are on water meters.

75% of Calgary homes are on water meters.

Checking for Leaks

An undetected leak can waste hundreds of litres of treated water, which impacts your utility bill. A faulty toilet could cost up to \$1000 per month in a home with a water meter.

The first thing you should do is check if there is any water leakage in your home. This can be easily accomplished if your home has a water meter. By checking if water continues to pass through the water meter when all taps and water appliances – including ice trays, humidifiers, hot water heater, and water softeners – have been turned off. Specifically, observe if the triangular low-flow indicator is moving. If so, this is an indication that there is a leak in your home.

- ☐ **Yes/No** - There is water leakage.

Check for a Toilet Leak

It is easy to detect a toilet leak and it is wise to check for leaks a few times a year. Simply put a few drops of food colouring into your toilet tank and wait 5 minutes without flushing. If colour from the toilet tank drains to the bowl, this is an indication that you have a toilet leak.

- ☐ **Yes/No** - There is toilet leakage in the home.

Epcor suggests a number of toilet parts to check to ensure full toilet function to avoid leakage:

- ☐ Does the flapper valve need to be replaced?
- ☐ Does the chain length need to be adjusted?
- ☐ Is the ballcock leaking?
- ☐ Does the float arm require adjusting? (The water level should be half an inch below the overflow tube.)
- ☐ Ensure the refill tube is 25 mm (1 inch) above the overflow tube.

Money down the Toilet

The average family loses approximately 14% of their water usage through leaks, most commonly in toilets.



Lawn Care

Water usage doubles in the summer due to watering of lawns and gardens.

- ☐ **Yes/No** - The home has a drip irrigation system that applies water only to the root zone.

- ☐ **Yes/No** - The home has rain barrels installed. Rain barrels capture water from your eaves troughs, an easy and economical way to save water, money and use soft, chlorine-free water on your plants.



- ☐ **Yes/No** - The yard has native ground covers and flowers that require little upkeep and are drought resistant.

- ☐ **Yes/No** - The yard is “ecoscaped” or “xeroscaped”.

Water Appliances

Toilets

Many older toilets use up to 20 liters of water per flush - a huge water waster.

Good

☐ **Yes/No** - The toilet has a toilet tank bag to flush away less water.

Better

☐ **Yes/No** - The toilets are low-flush toilets (using 6 litres per flush).

Best

☐ **Yes/No** - The toilets are dual flush (3 litres for liquids, 6 litres for solids).

Reduce Water NOT 'Feel' of Shower

Low flow models use 9 litres of water or less per minute, compared to 15 -19 litres per minute with conventional shower heads. Low flow models force water through small apertures, increasing the water velocity, and thereby giving a similar feel to conventional showerheads.



Washing Machine

☐ **Yes/No** - The washing machine is a high efficiency front load washer.

Low-flow Shower Heads

☐ **Yes/No** - A low-flow shower head is installed.

Dishwasher

☐ **Yes/No** - The dishwasher is water efficient.

Faucets

☐ **Yes/No** - Aerators are installed on all the faucets.



Rebates



Your water service provider may be offering rebates to encourage residents to replace water appliances such as toilets and clothes washers with higher efficiency models.

Home Waste Management

The way that you manage the waste your home generates is very important. Households that compost organics and recycle all recyclables produce much less than half the garbage of the average home. Alberta's landfills are rapidly filling up and are a source of methane, a potent greenhouse gas.

What is organic matter?

Vegetative food — vegetable and fruit peelings, coffee grounds

Yard waste — grass clippings, leaves, and tree trimmings



Composting

35% of household waste is organic material that when sent to landfill creates methane, a Greenhouse Gas 22 times more potent than CO₂. Conversely, backyard composting provides an oxygen rich environment where organics can biodegrade. Backyard composting will also provide you with a nutrient-rich soil amendment that will enhance your garden.

☐ **Yes/No** - Does the home have a backyard composter or other organics disposal mechanism?

☐ **Yes/No** - Is curb-side collection of organics available?

☐ **Yes/No** - Is there a near-by collection point for organics?

Note: keep in mind that garburators add to the landfill problem; they don't solve it.

Recycling

By recycling

- paper
- cardboard
- aluminium cans
- glass
- plastic

you are helping to conserve Alberta's natural resources and reduce the pollution generated by the use and processing of raw materials.

☐ **Yes/No** - Is there space for a "recycling centre" in your home where you can sort and store recyclables?

☐ **Yes/No** - Is there a recycling depot close to your home?

☐ **Yes/No** - Is there a money-back bottle depot close to your home?

☐ **Yes/No** - Is curb-side recycling of paper, cardboard, aluminium cans, glass, and plastic available?



For Multi-family Dwellings

☐ **Yes/No** - Is there a collection point for sorted compostables and recyclables in your building?

A Final Word about Location and Amenities

Location is considered by many to be the most important attribute of a home. This is true not only for the sake of what your neighbourhood looks and feels like, but critical for the lifestyle that it provides you and the associated health and environmental benefits. Consider that living close to where you shop, work, go to school, play, and socialise can have a significant impact on your health and quality of life. You will spend less time in your vehicle and more time walking, riding your bike, and using transit, all of which provide opportunities for exercise and feeling more connected to your community. Not to mention that reduced car travel / pollution / fossil fuel use is one of the most significant ways to reduce your personal impact on the environment.

Just for Fun: Check out your Neighbourhood's "Walkability"

Walkscore.com is a website that helps people living in Canada, the U.S., and the U.K. to find walkable places to live - meaning close to shops, restaurants, schools, and parks – so they can live a "car-lite" lifestyle. Homes are rated from 0 – 100. While this is a fun and interesting tool, please note that there are many limitations on the data including proximity to public transit, bike paths, street and community design, safety, topography, freeways, bodies of water and weather.

Clean Calgary Association welcomes your questions, comments, and suggestions about this guide. To contact us with inquiries or feedback or to register in a Your New Home workshop, please call or email us using the information below.

For additional copies of this guide, or for information about environmental products, please visit the

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