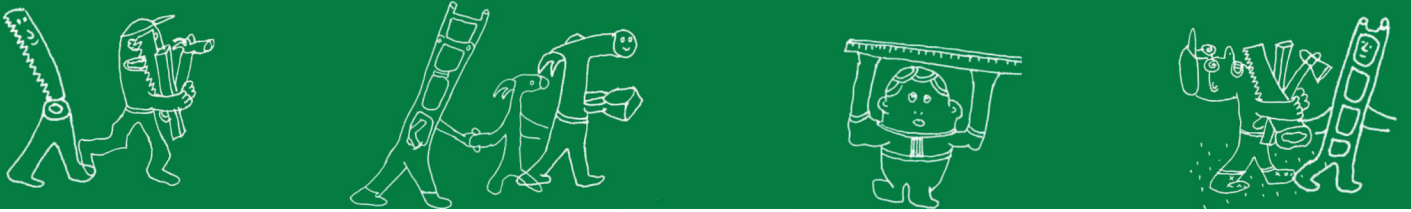


# Green Renovation Toolkit



## AN INTRODUCTION

You want to improve your building, but where to start? There are many things to consider when beginning a renovation ranging from costs, aesthetics, environmental impact and availability of materials, to energy efficiency. The following are some questions to ask yourself, renovation professionals, and building suppliers that will help the environment, your health, and your budget as your project unfolds.

### WHAT is needed?

Keeping the three “Rs” in mind throughout every building project is basic green practice.

#### REUSE:

- 25-30% of solid waste in today’s landfills comes from construction and demolition practices.
- Identifying a contractor open to reuse of materials that are part of a space which is going to be renovated, can be the first step in reducing landfill burdens.
- Examples: **1.** Kitchen cabinets can be remodeled, refinished, or relocated for extra storage space instead of being disposed of **2.** Wood can be de-nailed and re-used **3.** Unconventional sheathing materials, like acoustic ceiling tiles (usually destined for the dump), can be used to cover internal walls and finished with earth plasters to create beautiful, smooth wall surfaces.

#### RECYCLE:

- Materials that cannot be used on site can either be recycled through websites like Freecycle<sup>1</sup> or donated to stores, which resell building products.
- If not reusable, materials are generally recyclable through local waste management facilities.

#### REDUCE:

- If new materials are required, making accurate calculations of quantities needed reduces “leftovers” at the end of a project. This kind of foresight cuts down on project costs and prevents building materials from ending up in the waste stream.

- The Canada Mortgage and Housing Corporation (CMHC) provides useful, free information on how to plan renovations, complete needs assessments, and set priorities for a renovation.
- When purchasing new appliances or heating systems, look for models with high EnergyStar ratings to identify those that are most energy efficient.

Before starting a renovation, an EnerGuide energy evaluation is recommended (see Resources section). This provides good information on building strategies and government rebates for various types of work completed.

### HOW was it made?

The production of building materials has a huge impact on the environment. Before choosing a product, ask suppliers and designers questions like:

- How were the materials extracted?
- How much energy was needed to manufacture the final product?
- Are the resources extracted for its production of a rapidly renewable nature, i.e. bamboo?
- What happens to the product at the end of its lifecycle in a building? Can it be reused or recycled at that time?
- What glues or chemicals have been used in its production that might affect the health of the user, the workers who produced it, or the environment?

### Examples:

1. Conventional drywall consists mostly of mined gypsum. Drywall made with artificial gypsum, derived from the scrubbers of coal-fired power plants is an alternative that is not mined.<sup>2</sup>

2. Forest Stewardship Council (FSC) – certified wood, which is harvested in a sustainable manner, is a good alternative to regular harvested wood where clear-cut methods have been used.<sup>3</sup>

3. Concrete is widely used in the building industry, and requires a tremendous amount of energy to produce. It is

a little known fact that cement production, a primary component of concrete, accounts for up to 10% of the world's total carbon dioxide emissions.<sup>4</sup> Transportation of cement adds even more to greenhouse gas emissions, and recycling opportunities for concrete are still very limited.

## WHERE was it made?

Transportation of building materials is a major contributor to greenhouse gas production and global warming. With modern transportation methods and globalization of the economy, products can be extracted, produced and then transported from almost anywhere to anywhere, in the world. Purchasing products that are made locally/regionally, whenever possible, will support local economies as well as reduce fuel consumption.

## WHAT are the health factors?

Construction materials have a positive or negative effect on the environment, the indoor air quality of buildings, and occupant health after they have been installed. Some products continue to emit gasses into the air for months, or years, after they have been installed.

Volatile organic compounds (VOCs) and formaldehyde are some of the chemicals that off-gas into the environment. Effects from these can range from eye, nose and throat irritation to cough and respiratory distress to skin irritation, nausea, headaches and dizziness.

Formaldehyde is used as a glue or binding agent in many products commonly found in our buildings, such as composite wood products (particleboard, fibreboard and plywood), upholstery, carpeting, fiberglass insulation, paints and finishes, glues, cleaners, waxes and other common household products. Options are available for materials without formaldehyde and VOCs, which do not emit harmful chemicals.

The Nova Scotia Green Sheets<sup>5</sup> provide information on the indoor air quality of different products.

CMHC has produced a detailed listing of building materials and their chemical composition "Building Materials for the Environmentally Sensitive", which can help to make healthy purchas-

ing choices. By requesting zero-VOC products every time one is in a buying position, consumers can influence the market to create better and more accessible, environmentally friendly choices.

## Bibliography

- Green Remodeling, Changing the World One Room at a Time*, David Johnston and Kim Master, (2004)  
*Healthy Housing Renovation Planner: Renovate the Healthy Way*, Canada Mortgage and Housing Corporation (CMHC) (1999)  
*Natural Remodeling for the Not-So-Green House*, Carol Venolia & Kelly Lerner (2006)  
*Redux: Designs that Reuse, Recycle, and Reveal*, Jennifer Roberts (2005)  
*The Healthy Home; Beautiful Interiors that Enhance the Environment and your Well-Being*, Jackie Craven (2003)  
*The Resourceful Renovator; Gallery of Ideas for Reusing Building Materials*, Jennifer Corson (2000)  
*Eco-Renovation; the Ecological Home Improvement Guide*, Edward Harland (1993)  
*Building Materials for the Environmentally Hypersensitive*, CMHC

## Resources:

- Ecology Action Centre: [www.ecologyaction.ca/newhome](http://www.ecologyaction.ca/newhome) tel. (902) 442-2202  
CMHC: [www.cmhc-schl.gc.ca](http://www.cmhc-schl.gc.ca) tel. (902) 426-4715 or (902) 426-5780  
Conserve Nova Scotia: [www.conservens.ca](http://www.conservens.ca) tel. (902) 424-0790  
EnerInfo Hotline: 1-800-670-4636  
Environmental Building News: [www.buildinggreen.com](http://www.buildinggreen.com)  
Ecological Building Network: [www.ecobuildnetwork.org](http://www.ecobuildnetwork.org)  
Sustainable Sources: [www.greenbuilder.com](http://www.greenbuilder.com)  
Nova Scotia Green Sheets: [www.ecologyaction.ca/newhome](http://www.ecologyaction.ca/newhome)  
Forest Stewardship Council Products in Nova Scotia:  
[www.novascotiaforests.ca/files/Nagaya\\_FSC\\_Wood\\_Nova\\_Scotia.pdf](http://www.novascotiaforests.ca/files/Nagaya_FSC_Wood_Nova_Scotia.pdf)

EnerGuide home energy evaluations:

- Clean Nova Scotia: [www.cleannns.ns.ca](http://www.cleannns.ns.ca) tel. (902) 420-3474
- Sustainable Housing: [www.sustainablehousing.ca](http://www.sustainablehousing.ca) tel. 1-877-722-2842

Efficiency information for small and medium-sized businesses:

- Eco-Efficiency Centre: [www.eco-efficiency.management.dal.ca](http://www.eco-efficiency.management.dal.ca) tel. (902) 461- 6704

## Endnotes

1. [www.freecycle.org/group/Canada/Nova%20Scotia/Halifax](http://www.freecycle.org/group/Canada/Nova%20Scotia/Halifax)
2. [cmhc-schl.gc.ca/en/co/renoho/refash/refash\\_002.cfm](http://cmhc-schl.gc.ca/en/co/renoho/refash/refash_002.cfm)
3. [www.novascotiaforests.ca](http://www.novascotiaforests.ca)
4. [www.livescience.com/environment/070129\\_clean\\_concrete.html](http://www.livescience.com/environment/070129_clean_concrete.html)
5. Nova Scotia Green Sheets: [www.ecologyaction.ca/newhome](http://www.ecologyaction.ca/newhome)

