VANCOUVER
GREEN CAPITAL*

Hiring a Pro

green home renovation
healthy homes for a healthy environment

Green

What is a Green Home Renovation?

It's an approach to home improvement with the goal of not only making your house look better, but work better–for both you and the environment. Want a healthier home? Lower utility bills? Reduced maintenance? A cleaner planet? A green renovation helps you realize a range of far-reaching benefits from a single smart design. With careful planning, you can create a home that combines beauty, efficiency, comfort and convenience with health and conservation.

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Why

Why Consider a Green Renovation?

SAVE MONEY
High-performance designs that save energy and water can reduce the day-to-day costs of living in your home. Often, the initial expense of professional design services can be quickly recouped with a multitude of benefits. For example, a skilled designer can help you better utilize your existing space, sometimes reducing or even eliminating the need–and expense–of adding more square footage.

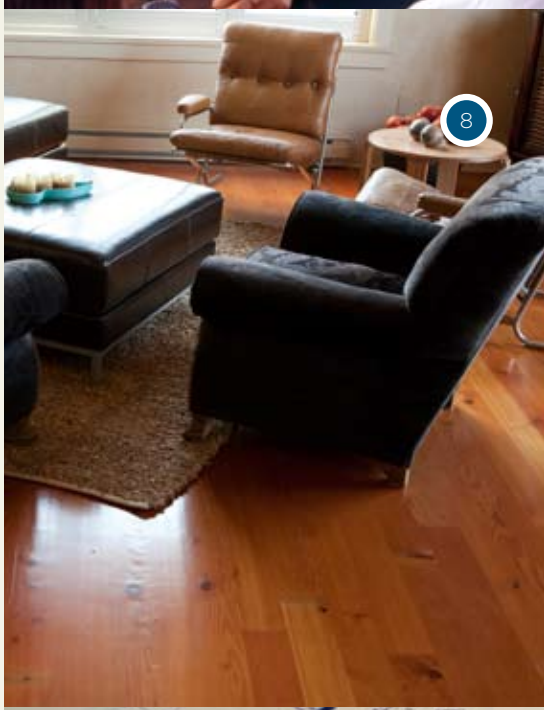
MAKE A HEALTHIER HOME
By selecting green building materials and finishes, you can minimize–or avoid completely–the introduction of toxic compounds into your home. You can also protect and enhance indoor air quality by using proper construction, ventilation and weatherproofing techniques. Health-conscious professionals can help you safely navigate any hazards you may encounter during your renovation.

REDUCE ECOLOGICAL IMPACT
Resource-efficient materials and designs lessen the depletion of our natural environment. A green designer or contractor can help you identify designs and products that will help your home perform better ecologically, as well as economically.

Hiring a Pro

A major home improvement project can cost hundreds of thousands of dollars. With such a significant investment, it makes sense to carefully consider not only your renovation design, but the professionals who will execute it. In fact, who you hire plays a key role in the success of your project–especially with a green renovation.

Your architect, interior designer, or contractor will require special skills and experience, depending on the specific goals of your project. The ideal green renovation professional offers direct experience with a project scope similar to the one you're considering, plus plenty of knowledge and enthusiasm for green concepts and practices. To increase the likelihood of your project's success, learn to ask the right questions, and research the abilities and approach of the professionals you're considering.



Contents

Looking for help on your specific project? Look to the Green Home Renovation series. You'll find them online vancouver.ca/sustainability

Rethink Renovation

Green renovations require a new approach to the home improvement process, with more up-front planning to take advantage of opportunities that might otherwise be missed with a conventional approach. This includes expanding your list of objectives as well as the way you compare the value of products and services–taking wide-angle and long-term views of decisions. It also means being willing to invest time and energy to find solutions that best fit your needs. Finally, a green renovation requires that you approach home improvement tasks with health and safety as priorities. This advance planning will pay large dividends in terms of long-term satisfaction with your project and cost containment.

Be aware that your relationship with design and building professionals will differ in green renovations, as well. Some designers and contractors are accustomed to relatively limited interaction with the client and others involved in the renovating process. In order to capture every opportunity, the green design approach encourages much more frequent conversation between the homeowner, architect, contractor, and occasionally specialists in renewable energy, human health, or engineering. Professionals involved in green renovation projects must be open and willing to spend time on these additional conversations and incorporate new "green" ideas.

Collaboration is key. If you're hiring for design and construction, as most homeowners do, the ideal green renovation requires:

- a committed, educated and involved homeowner,
- a design professional with the skills and willingness to capture your vision in a design,
- a contractor with the experience and abilities to make that design a reality, and
- the ability for all three to work together as a team.

Once these elements are in place, you'll be well on your way to a successful green renovation!

Photo © Graham Winterbottom

Decide What You Want

Just thinking about a renovation can elicit equal parts excitement and terror. Reduce the terror factor by allowing sufficient planning time. One year is usually ideal for coordinating a major renovation, although not always possible. Regardless of your timeline, the first step in the planning process involves defining your priorities and then considering all options carefully. The other renovation guides in the series include:

- Renovation Overview
- Kitchen
- Bath & Laundry
- Roofing
- Landscape Materials
- Painting & Finishes
- Lighting
- Salvage & Reuse.
- Green Home Buyers Guide
- Do It Yourself Energy Audit

Available at vancouver.ca/sustainability

Determine Project Scope

As a general renovating rule, extensive projects translate into expensive projects–both economically and ecologically. So if you stick with existing walls, cabinetry, plumbing and electrical layouts, you'll spend less. You'll also use fewer resources, and create less waste. Therefore, it's critical that you discuss your project's scope with your architect or interior designer. Make scope limitation a priority, and identify strategies for accomplishing your goals with minimal structural modification to your home. Beyond the environmental and financial benefits, this approach also helps minimize disruption caused by a renovation–an especially pertinent concern when you're trying to live in a space under construction.

Adding space to a home often costs $200 per square foot or more. Managing your project's scope can save money and benefit the environment at the same time.

A project focused on energy and water efficiency can help pay for itself. Simply replacing a toilet that's over ten years old with a new, efficient model can reduce water use and sewer water generation by 10 per cent.

Expand Your Definition of Cost

Focus on long-term savings, ease of maintenance and conservation. Initial price only gives a peephole view of the true cost of a product or design. A higher purchase price can mean a better deal in the long run. For example, you can actually reduce the cost of living in your home by choosing resource-efficient fixtures (lowering monthly utility bills) and durable materials (requiring less frequent replacement). A low purchase price may simply mean a good deal–or it may signify a lack of quality or durability, or even that some environmental, health, or social costs are not reflected on the price tag.

The cost of design and construction services can also be misleading if you only consider initial price. The collaborative nature of the green design approach requires more up-front time (which usually translates into billable hours). But this early planning stage can reap tremendous benefits later: design solutions that better meet your needs or reduce the project scope, fewer construction materials and expenses, or features that save energy, water, or maintenance.

Photo above left © Graham Winterbottom Photography.
Photo, above: Robert Harrison Architects.

Do Your Homework

Research helps you ask the right questions of retailers, your designer and/or contractor–or avoid costly mistakes if you are doing some of the work yourself. Start early to look for design ideas and businesses that carry the green products you like.

Keep a file of contact names and businesses, as well as magazine and newspaper clippings. Help your design professional or contractor access these products quickly and easily, by providing them with the names of manufacturers and suppliers. In addition to helping keep your project on schedule, this extra effort will reduce the likelihood the materials and products you've selected will be replaced with something you don't want.

Homework will also help you converse better with your hired professionals. Knowing enough to discuss the pros and cons of a design or material will increase your participation in the renovation, and enhance your ownership in both the process and final product.

Respect Your Neighbours

Major renovations are often noisy and disruptive; even exterior painting can affect neighbours. Keep the peace in your neighbourhood by making sure your neighbours are up-to-date on your plans, especially any elements that may impact them during or after construction. Whether it's an addition that affects their view or access to sunlight in the yard, or lost privacy due to workers that may be in your back or side yards, discuss these issues with your neighbours well in advance. Ensure compliance with City of Vancouver noise bylaw and remove dumpster as quickly as possible.

Learn more with this guide's companion Resource list. You'll find it online at vancouver.ca/sustainability.

Design/build companies combine architectural and construction functions in one firm, helping coordinate a renovation project. Each design/build firm should be evaluated on their own merits; use the suggestions in both sections of this guide to help.

Design Professionals

Architects and interior designers receive specialized training that gives them insight into building and space requirements, while landscape designers gain similar insights as they relate to the outdoor environment. Because of this, hiring a design professional can quickly pay for itself with reduced hassles related to permitting and the design process–you can also avoid costly construction mistakes or poorly conceived designs that won't function well over time.

The first step in choosing an architect or designer? Learn how their professions work. Architects, interior designers, and landscape designers all have various associations that help explain their professions and certifications to identify qualified individuals.

- Architectural Institute of BC: www.aibc.ca
- Professional Engineers and Geoscientists of BC: www.apeg.bc.ca
- Interior Designers of Canada: www.interiordesigncanada.com
- BC Landscape Architects: www.bcsla.org
- Greater Vancouver Home Builders' Association: www.gvhba.org

Next, find a pool of candidates. Start your search by surveying friends, family and coworkers with recent renovation experience. Visit websites of local architects and designers. Then narrow the field of potential designers to those who meet your personal criteria. *Green design* is a relatively new and quickly evolving field. Not all designers are well versed in its various elements. One resource for finding local green architects, interior designers and contractors is the service provider directory from Light House Sustainable Building Centre at www.sustainablebuildingcentre.com. Keep in mind that inclusion in the directory does not assure any level of expertise in green building. Verify for yourself if the professionals you're considering meet your requirements.

Photo © Graham Winterbottom Photography

Design Choices

Once you tap into the local design community, you'll find a variety of firms with a green reputation. Upon closer examination, you'll discover that most companies pick a particular specialty within the green building arena. Some firms, however, take a more general approach, becoming well versed in multiple areas of green focus. The following table describes some of these specialties.

Green Design Specialties

small home design	With the success of Sarah Susanka's Not So Big House book series, many are questioning if bigger is truly better when it comes to housing. Smaller is inherently greener, in that it means fewer construction materials, and less space to heat and maintain. Money not spent on additional square footage can then be used for green upgrades and superior craftsmanship. If this is one of your goals, look for a designer experienced in making the most of smaller spaces.
healthy homes	Increased incidence of childhood asthma, allergies, and even multiple chemical sensitivity (a phenomenon where a person becomes highly sensitized to a variety of chemical irritants) emphasizes the need for healthy indoor environments. Airtight houses save energy, but without proper ventilation and careful avoidance of toxic and irritating building materials, they can compromise indoor air quality. Designers well versed in healthy home practices can create efficient renovations that also protect occupant health. See the resources section for more info on toxins in the home.
energy-efficient & passive design	Concerns about rising energy costs and global warming focus attention on home energy efficiency. Professionals skilled in energy-efficient design can help you create a home less susceptible to future shocks in energy prices. Some designers boast a sub-specialty in solar design, both passive solar and solar electric. Passive solar design uses strategic window placement, shading, and other strategies to take advantage of free energy from the sun and reduce your home's reliance on electricity and fossil fuel heat sources. For tips on harnessing the natural power of the sun for heating and cooling, see the City of Vancouver's Passive Design Toolkit for Homes downloadable at vancouver.ca/sustainability.
natural landscaping	Conventional landscapes use lots of water, produce large amounts of yard waste, and overuse chemicals that are bad for the environment and our families' health. A natural landscaping approach can save money and time, while protecting the health of people and the environment. A growing number of landscape designers and landscape companies are using natural landscaping practices. To learn more about natural waterwise lawn and garden care, download the City of Vancouver's Water Wise Landscape Guidelines at vancouver.ca/commsvcs/guidelines/W005.pdf or visit www.evergreen.ca.
barrier-free design	Often called Universal Design, this field focuses on creating spaces that welcome users of all ages, sizes and abilities. A green strategy in that it allows us to use the same space even as our abilities change, Universal Design reduces the need for costly space modifications. Examples of Universal Design in action: lever handles, countertops of varying heights, adjustable showerheads and curb-free shower entries. The key is to elegantly integrate these elements. Professionals experienced in designing for those with limited mobility will likely be best at incorporating Universal Design seamlessly into your project.
salvaged materials	Salvaged materials offer one of the greenest material choices, since they extend the life of products already produced. Be aware however, that integrating salvaged items can turn the design process upside down. Found materials very often dictate a project's design–rather than the more customary process of choosing a design and then manipulating materials to fit it. Some designers are more adept at this approach to design than others. For more, refer to the Green Home Renovation Salvage & Reuse guide.
natural building	This green building sub-specialty prioritizes traditional and indigenous building practices, as well as the use of stone, mud, timber and straw. Examples of natural building techniques include straw bale, rammed earth, and cob (a mix of sand, clay and straw); many of which prove challenging to incorporate into an existing structure. Also note that obtaining permits for these projects often requires careful interaction with permitting agencies. Designers experienced with natural building techniques can evaluate their applicability to your project. Other natural building techniques, such as plaster wall finishes, are more amenable to renovation projects. The Art of Natural Building edited by Kennedy, Smith, and Wanek (New Society Publishers, 2001) is an excellent introduction to various natural building techniques.

Take notes when interviewing prospective design professionals. This will help you compare skills and services and make an informed decision.

Selecting a Design Professional

When evaluating your design candidates, state your green goals and priorities up front, then gauge reactions. Your ideas should generate a positive, if not enthusiastic, response. Of course, realism counts, too. But the design professional should take your concepts seriously, and show an eagerness to help execute them. Hesitation or doubt on a candidate's part indicates that your priorities are in conflict–which ultimately could result in a rocky working relationship.

Evaluate Education and Experience

Schooling, and more importantly, direct green design experience is key to identifying a designer that can meet your needs. As you interview prospective designers, consider the following:

- Ask about specific green building training, including continuing education through design organizations.
- Look for green design books, product information, or sample materials in the office. Inquire about subscriptions to green design journals, or access to online environmental design and construction resources.
- Request a tour of the designer's materials sample library, and ask for examples of green materials. The designer should be able to produce multiple examples of low-toxic, recycled-content, locally produced or otherwise green products.
- Look for direct experience in the green building areas that are most important to you. Can the candidate identify past projects with clients who had priorities similar to your own? Ask for–and check up on–references, specifically from projects like yours.
- Ask to see *specifications*, or *specs* from previous jobs that incorporate green principles. Specs are boilerplate contract language that spells out the marching orders for everyone involved in building/renovating a house, down to which paint to use and how it is applied to the brand and exact stain on the cabinets. Architects usually customize general specifications for their office, and then further modify them for each job. Examples of green specs include construction recycling and reuse, indoor air quality management during construction, requirements that you must personally approve any materials substitutions, and specifications for green materials and products.

Identify Green Business Practices

The most experienced green design professionals employ green principles in their office too. Look for green building materials, and energy- and water-efficiency features. Office practices should include recycling, double-sided copying, and reusable kitchenware. An added bonus is encouragement of alternative transportation (such as showers for bicycle commuters or reimbursement for bus-riding employees).

Respect the Social Element

The interpersonal element is frequently underestimated, to disastrous results. Do you *like* the design professional as a person? Do you communicate well, and feel heard when you voice concerns or ideas? This doesn't mean you have to be best friends; in fact maintaining a businesslike relationship is advisable. But you should sense a mutual respect. Remember that the most successful green renovations include an actively involved client throughout the entire process. Maintain regular contact with your design professional, and keep tabs on the design as it develops. Even with the best communication, plans can veer off track. Early identification and correction of elements that don't meet your needs will cost less and cause fewer disruptions, while keeping the project on its timeline.

Green Building Rating Systems & Qualifications

Rating systems exist as a way to evaluate the environmental performance of a building against a set of criteria that act as a benchmark for comparison of projects. Ask your contractor if he has previous experience with any of the following current rating systems for home:

- Built Green™, an industry driven voluntary program available in BC and Alberta that promotes "green" building practices (managed by the Canadian Home Builders' Association of BC, CHBA BC);
- R-2000 Standard is a performance-based standard similar to Built Green;
- Leadership in Energy and Environmental Design (LEED) for Homes is a rating system offered by the Canada Green Building Council;
- Powersmart for New homes is a Provincial programme operated by BC Hydro, closely linked to the EnerGuide Rating System; and
- EnerGuide for New Houses rating is a standard operated by Natural Resources Canada (NRCan) to measure your home's energy performance.

Education and training is key to ensure your contractor's skill level is up-to-date and that they are experienced with green building practices and products. For example, successful completion of the 2-day Built Green™ Builder Training is required to become a Built Green™ Certified Builder member. Since the R-2000 builder training curriculum is the foundation of the Built Green™ Builder Training, successful completion will also classify the builder as an "R-2000 Trained Builder", eligible to build an R-2000 demonstration home. For more information on local training and education sessions, visit www.chbabc.org.

Renovate with confidence by using one of Greater Vancouver Home Builders' Association renovator members who have "raised the bar" by meeting the criteria to join the program, and now proudly display the RenoMark™ logo with their company. For more information visit www.renomark.ca/Vancouver/

Photos top right, middle right Built Green™ Idea Home, designed by Mithun and built by Bennett Homes
All other photos © Graham Winterbottom Photography

Contractors

A contractor takes your home improvement plans and turns them into reality. During hot economic cycles, you may have difficulty finding a contractor for your job. But lowering your criteria can result in headaches, or worse. So be patient and stick to your priorities for health, safety and the environment.

Learn About Building Contractors

Educate yourself about the home improvement contractor process. The following table lists skills contractors should have to complete a green renovation. For an excellent primer on the process, visit www.hiringacontractor.com (Canadian Home Builders' Association and Canadian Mortgage and Housing Corporation-sponsored).

construction recycling & reuse	Renovations can generate tremendous amounts of waste–or resources, depending on the manner in which materials are handled. Contractors can reduce waste through salvage and reuse, and maximize recycling, to keep useful materials out of the landfill. Make sure your contractor has a construction waste management plan for your project. Have your contractor visit the Metro Vancouver BuildSmart website (www.metrovancouver.org/buildsmart) and download the Demolition, Land Clearing and Construction (DLC) Waste Management Toolkit at no cost. Also refer to the Salvage & Reuse guide.
healthy home construction	Renovation activities pose various hazards, from lead paint dust to asbestos exposure. Minimize these hazards with special precautions, and ensure they remain contained only in the areas under construction. Prevent future problems by keeping materials dry and protected prior to installation. Also choose construction materials such as adhesives, glues, and finishes that affect air quality the least.
water-quality protection	Renovation projects involving a home's exterior or grounds can negatively affect water quality by allowing silt and contaminants to wash into our urban creeks, lakes, and waterways. The City of Vancouver maintains strict code requirements for protecting water quality during construction. Other strategies for protecting water quality include proper handling of paints and finishes, using non toxic concrete form-release compounds, biodiesel (a plant-based alternative to petroleum diesel) in earth-moving equipment and diesel trucks, and substituting hazardous substances and cleaners with low- or non toxic alternatives.

Contractors skilled at reuse and recycling can divert 70 per cent or more of construction waste from the landfill. Combined with deconstruction practices, waste can be reduced by 90 per cent.

Your design professional can write requirements for such waste reduction, recycling, healthy home construction and water quality protection activities into the specifications for your project, making green construction practices part of the legal documentation of your renovation renovation project.

Finding a Contractor

Like locating a designer, begin your search identifying prospective candidates. You can certainly take the friends-, family- and coworkers-referral route here, too. Also consider *design/build* firms that provide both design and construction services. This streamlined approach often saves time and coordination hassles on a project. Of course, as with any major decision, weigh all benefits and costs before proceeding.

In your quest for a qualified contractor, you can also take advantage of two local resources. The first is the Renomark program (see page 8 for more). Another option is the service provider directory from Light House Sustainable Building Centre; simply go to www.sustainablebuildingcentre.com. Note that neither requires a proficiency test to be listed.

If you're working with a design professional, ask for a shortlist of preferred contractors. This can make the contractor search process much easier, especially if your project is similar to others the designer has completed. The fact that a design professional is willing to recommend a contractor to execute his/her design indicates trust in the contractor's abilities. Regardless of such a referral, it's always wise to evaluate contractors on their own merits.

Photo second from bottom right: GreenLeaf Construction.

Contractors skilled at reuse and recycling can divert 70 per cent or more of construction waste from the landfill. Combined with deconstruction practices, waste can be reduced by 90 per cent.

Choosing a Contractor

When evaluating your prospective contractors, determine if their abilities mesh with your project. As with design professionals, there are ways to evaluate a prospective contractor's skill sets, business practices, and interpersonal skills.

Evaluate Education and Experience

Determining a candidate's schooling, qualifications, and real-life green renovation experience is key to the successful realization of your project.

Ask for examples of previous projects featuring elements in your design. Ask specific questions related to your design, such as "Have you done a project that used low-toxic finishes and paints?" or "Have you worked on a job that used Advanced Framing techniques (framing on 24-inch intervals rather than 16 inches)?" or "Can you show me an example of a job where you worked with salvaged materials?" If the contractor answers affirmatively, ask for details–and references for the specific job.

Identify Green Business Practices

Does the contractor walk the talk? Look for office operations emphasizing energy efficiency, recycling and waste prevention. Do work trucks use biodiesel? An environmentally responsible workplace goes hand-in-hand with green renovation services.

Respect the Social Element

Does the contractor listen to your questions and concerns? Are responses solution-oriented, rather than simply claiming something can't be done? Many contractors are wary of new materials and methods, fearful of call-backs and dissatisfied customers blaming them for the failure of a building element that isn't time-tested. A contractor should be able to raise concerns in a way that seeks mutually acceptable resolution. If communication is difficult or one-sided, expect challenges down the road. Open communication and a can-do approach, on the other hand, is a very good sign.

Once you've selected your contractor, maintain close communication throughout the project's duration. The most ambitious green renovations rely on an actively involved homeowner–one who is willing to make a personal trip to get the desired material or product if timing is tight and the crew is short. Showing respect and appreciation to contractors is an important part of maintaining a good working relationship. Don't be hesitant to say "thank you!" for a job well done, or bring coffee to workers burning the midnight oil on your project. Another tip: take pictures of the job before the walls go up, to identify electrical and plumbing layouts, and ensure work matches plans. These photos will come in handy when memories fade or the house sells. Take a final walk-through with the architect or designer prior to project sign-off–or final contractor payment–to identify last-minute issues before the contractor has packed up and left. With creativity, diligence and good humour, you can ensure that your green renovation is an experience to remember–for good!

Resources

Design Professionals

- Architectural Institute of BC www.aibc.ca
- Professional Engineers and Geoscientists of BC www.apeg.bc.ca
- Interior Designers of Canada www.interiordesigncanada.com
- BC Landscape Architects www.bcla.org
- Greater Vancouver Home Builders' Association www.gvhba.org and the Renomark™ program www.renomark.ca/Vancouver/
- Vancouver Regional Construction Association www.vrca.bc.ca/

Websites

Light House Sustainable Building Centre provides a "first-stop" integrated service shop that connects British Columbians with the inspiration, information, services and skills they need to implement sustainable building solutions. Light House also provides education, training and outreach programs that will foster a deeper awareness of and commitment to sustainable building practices. www.sustainablebuildingcentre.com

Metro Vancouver's Buildsmart is a program of tools, technical assistance and information to encourage the use of green building strategies and technologies. www.metrovancouver.org/buildsmart

Canadian Home Builders' Association's Homeowners' Guide to Green Renovation. www.chba.ca

The Renovation Roadmap, a compilation of well-recognized publications such as Keeping the Heat In by Natural Resources Canada. This site will help you make the right choices and develop a clear map to reach your renovation goals: www.myhomereno.com/

Aerius Indoor Air Quality Resource Centre provides information on building materials and their associated impacts. One section is dedicated to information for preventing IAQ problems in residential buildings, including control of pollutants and their source, ventilation and filtration, and education of occupants. www.aerias.org

Canadian Mortgage and Housing Corporation provides extensive information on Renovating a Home. To help you plan your renovation project, CMHC has information and easy-to-understand tips that can help you assess your requirements and learn the key questions before you get started. The renovation guides include information on planning, renovating for energy efficiency, and financing options. www.cmhc-schl.gc.ca/en/co/renoho/index.cfm

Natural Resources Canada - Office of Energy Efficiency provides information on how to conserve energy at home during renovations and new construction. Thorough information on major appliances, heating equipment and controls, cooling and ventilation equipment and controls, windows, doors and skylights, lighting, office equipment and home electronics. www.oee.nrcan.gc.ca

Photo top right: Ross Chapin Architects

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