



# Construction/Renovation/Deconstruction

AN ICI WASTE REDUCTION STRATEGY HANDOUT

Being "green" can and should be part of every construction, renovation, deconstruction, or demolition company's corporate strategy. Proof is in a Canadian Mortgage and Housing Corporation study that revealed growing consumer awareness that buildings affect the environment, and increasing consumer support for options that contain significant environmental benefits.

Given this demand for environmental responsibility, prosperity will go to those who incorporate green design features, adopt more efficient work habits and conserve building materials. This approach will not only attract consumers, it will reduce business costs – a benefit that can be passed on in the form of more affordable prices.

And while being green isn't necessarily easy, it needn't be difficult either. It's really just a matter of replacing one habit with another!



## Bent Nail goes straight to the source for recycled goods

Since 1997, Dave and Shirley Voth's Bent Nail New & Used Building Supplies in Abbotsford, B.C. has grown from a small operation of 2,600 square feet to a 12,000-square-foot warehouse. Through direct purchasing, deconstruction and consignment, Bent Nail now provides new and used lumber, plumbing fixtures, windows, kitchen cabinets, and insulation to homeowners and builders alike. It also stocks older hardware items that are no longer produced.

"The growth has been great," says Shirley Voth. "People are now actively looking to buy recycled goods for their environmental and cost benefits." The Voths are proud to offer significant savings while keeping tons of old-growth timber and reusable materials out of area landfills each year.

For more information visit call 604-850-2691 or [www.bentnail.org](http://www.bentnail.org)



**Enjoy the benefits of wasting away!** Here's how your construction/renovation/ demolition company can provide a safer work environment, save money, boost its "green" image, protect the environment, and support provincial and local legislation.

1. Designate a person responsible for waste management and recycling.
2. Research waste reduction successes in the construction/renovation/ demolition industries.
3. Conduct a waste audit to determine how much and what kinds of waste are being produced and the cost of its disposal. Contact the Regional District for a *Waste Audit Kit*.
4. Investigate local disposal regulations, recycling facilities, and disposal options.
5. Assess waste separation, storage, and transportation systems.
6. Prioritize waste streams and identify how you can reduce, reuse, and recycle (in that order) the materials in each stream.
7. Set waste reduction goals, develop Waste Reduction Plans for each phase of construction, and introduce policies and procedures that support your plan (e.g. purchasing policies that require less packaging). Contact the Regional District for a *Waste Reduction Planning Kit*.
8. Evaluate materials ordering and on-site storage procedures.
9. Assess all building plans and layouts for efficient material use.
10. Provide suitable containers (e.g. recycling bins on job sites).
11. Develop worker incentives.
12. Educate employees, suppliers, and clients about proper waste reduction and recycling procedures.
13. Monitor, evaluate, and refine your recycling program regularly.
14. Publicize your commitment to waste reducing in advertising.
15. *Count the time and money saved!*

## Wasteless Building Practices

**Lumber** is the biggest component of the waste stream for new construction and renovation. Applying the following principles will reduce the amount of lumber you buy and dispose of.

### REDUCE

- Review floor plans and elevations to ensure optimal use of subflooring and sheathing.
- Detail framing layouts to allow for more accurate ordering. Where possible, have studs and joists pre-cut to reduce on-site waste.
- Amend framing details, where necessary, to minimize unnecessary corner studs, avoid excessive amounts of lumber at window and door openings, and prevent overbuilt lintels.
- Consider using resource-efficient materials such as modular wall panels, wooden I-beams, and flooring underlay made from recycled cardboard.
- Buy kiln-dried lumber to reduce waste from warping and shrinkage.
- Store lumber to prevent warping and twisting from exposure to the elements.

### REUSE

- Eliminate procedural inefficiencies on construction and renovation sites.
- During demolition, carry out assessments of the reuse potential of lumber as it is exposed. You may see ways to reduce the purchase of new lumber by using the old. Set aside the sound, older pieces for sale.
- Make all cuts at a central location. Off-cuts can be used for cripples, lintels, and blocking.
- Contact used building supply stores; see if off-cuts/ extras are accepted for reuse.
- Dismantle pallets; use for forming stakes.
- Take unused lumber from one job to another.
- Use scraps for kindling.



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# Wasteless Building Practices

continued

## RECYCLE

- Chip or grind wood waste remaining on site; it can be recycled into products such as feedstock for pressed board, chipboard, pressed logs, animal bedding, and landscape cover.

**Drywall** is often discarded at the rate of one pound of waste for each square foot of finished floor area. Because gypsum can be easily recycled, some communities have banned drywall from landfills.

## REDUCE

- Evaluate floor plans to see if room sizes can be standardized to minimize the off-cuts from board stocks.
- Purchase drywall in stock sizes consistent with room dimensions. On large jobs, order drywall to suit custom designs.

## REUSE

- Place off-cuts within the interior partition walls to smooth temperature fluctuations from one room to another. Choose these locations carefully to allow for future rewiring or plumbing.
- Contact used building supply stores to see if off-cuts or extras are accepted for reuse.

## RECYCLE

- Determine what drywall recyclers will accept and if they'll pick up large quantities from your job site.

**Masonry** is the heaviest component of the waste stream and, therefore, can be costly to dispose of. Since burying it is discouraged or prohibited, reducing and reusing masonry waste can lower operating costs.

## REDUCE

- Improve take-off and ordering procedures. Half skids of brick and block and half boxes of tile are often discarded.

## REUSE

- Store excess bricks and blocks in a central location for use on other jobs.
- Contact used building supply stores to see if off-cuts or extras are accepted for reuse.
- Sell concrete residue from forming for use in retaining walls.

## RECYCLE

- Crush stone, brick, block, and concrete for use as aggregate in roadbuilding or as top cover in planted areas. For large demolition jobs, it can be economical to have a mobile crusher on site.

**Cardboard and Paper** waste, generally from packaging, is significant, and important when considering bin rental costs and landfill capacity. In many communities, cardboard is banned from landfills.

## REDUCE

- Specify that suppliers deliver goods with minimal of packaging and remove packaging after delivery. A well-timed construction process will ensure that

unprotected articles are not on site long enough to be damaged.

- Buy as many materials as possible in bulk.

## RECYCLE

- Place recycling bins on site.

**Metal** waste includes everything from old cast iron pipes and radiators to flashing, and siding. Fortunately, it's the easiest component of the waste stream to eliminate.

## REDUCE

- Require sub-trades to remove their wastes.

## REUSE

- Deliver old appliances to salvage yards or sell as part of a house strip sale. Refrigerators and air conditioners must go to contractors who can safely remove the coolants.
- Contact used building supply stores to see if off-cuts or extras are accepted for reuse.

## RECYCLE

- Contact scrap dealer.

**Plastic and Vinyl** waste from packaging, siding, and flooring, poses serious disposal problems because volumes are increasing and it does not degrade in landfills.

## REDUCE

- Specify that suppliers deliver goods with minimal packaging and remove packaging after delivery.

## REUSE

- Contact used building supply stores to see if off-cuts or extras are accepted for reuse.

## RECYCLE

- Contact recyclers about options for pick-up.

**Insulation** waste – including off-cuts from rigid board insulating sheathing, foundation insulation, and leftover glass fibre batts – generally accounts for about five percent of construction refuse.

## REDUCE

- Calculate carefully how much insulation is needed.

## REUSE

- Contact used building supply stores to see if off-cuts or extras are accepted for reuse.

## RECYCLE

- Keep waste clean so as not to spoil the load.
- Contact recyclers about options for pick-up.

**Paint, Solvent, and Sealant** waste is hazardous, as it can leak damaging chemicals into the soil, groundwater, and the atmosphere for decades.

## REDUCE

- Purchase only what you need, buy in bulk, and improve storage methods.

## REUSE

- Use leftover paint as primer.

## RECYCLE

- Take unused products to a paint recycler.

**Shingles** can be recycled and, in some communities, are banned from landfills. The best approach, however, is to reduce use by being more efficient.

## Helpful Hints for Construction/Renovation

- Develop a recycling program that best suits your work site.
- Set program and hauling arrangements before work starts.
- Target materials that are generated in significant volumes.
- Plan recycling bin locations with construction sequencing and layout of staging areas.
- Set recycling bins away from waste bins to prevent contamination.
- Provide clear signage on bins.
- Monitor recycling bins regularly to identify contamination problems early.
- Leave as many trees as possible standing. When they must be felled, chip the roots and branches on site.
- Use the growing variety of materials produced either entirely or partially from recycled material. By doing so, you help expand an industry that is a ready market for your construction waste.

## Salvaging/Recycling Demolition Materials

If existing buildings cannot be renovated or moved, assess the potential for deconstruction (salvage/recycling). The amount and type of materials that can be salvaged and recycled depends on the type, size, and condition of the building being demolished, the space available to operate machinery and temporarily store materials, and the time available to the contractor to do the work. These hints will help maximize your salvage efforts:

- Contact or enlist the help of experienced salvagers.
- Plan a systematic demolition before new construction to ensure maximum salvage.
- Allow enough time for careful salvage.
- Remove and dispose of hazardous and banned materials before salvage and demolition.
- Develop on-site procedures for separating recyclable waste from other waste materials.
- Visit the site regularly to observe salvage and recycling activities.
- Ensure that salvageable materials are removed by skilled workers and are properly stored on site.

## Contact Information:

B.C. Green Economy Initiative  
[www.gov.bc.ca/ges/](http://www.gov.bc.ca/ges/)

B.C. Materials Exchange 1-800-667-4321

B.C. Recycling Hotline 1-800-667-4321

Recycling Council of B.C. (604) 683-6009  
[www.rcbc.bc.ca](http://www.rcbc.bc.ca)

Regional District of North Okanagan (250) 545-5368  
[solidsolutions@nord.bc.ca](mailto:solidsolutions@nord.bc.ca)