www.ecologyaction.ca/toolkit

for more information and ideas

Heritage South Park home demolition for Trillium Project (photo Kim Thompson)

Action is our middle name!
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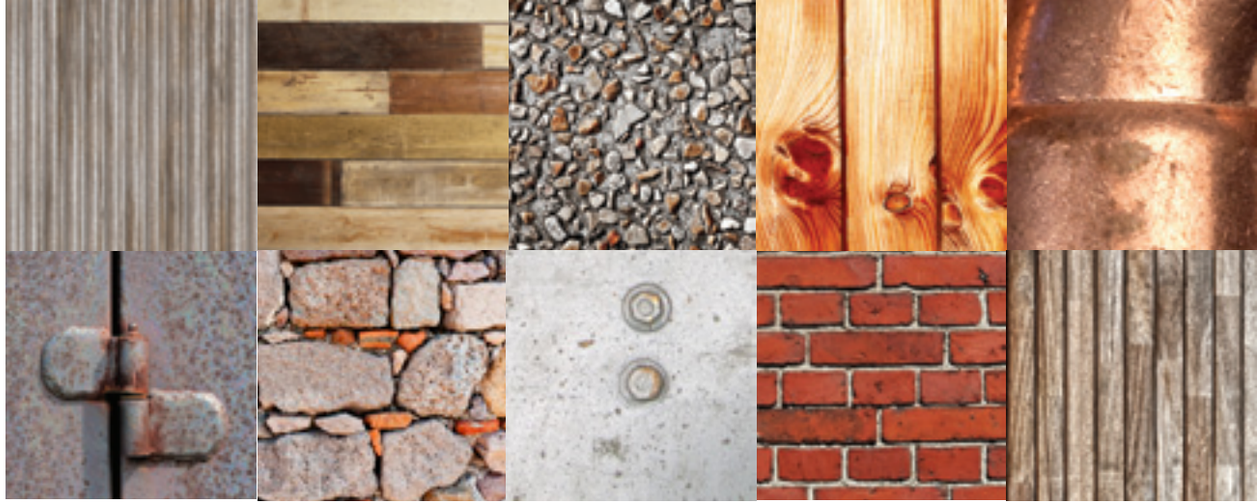
or call 429-2202 for more information.

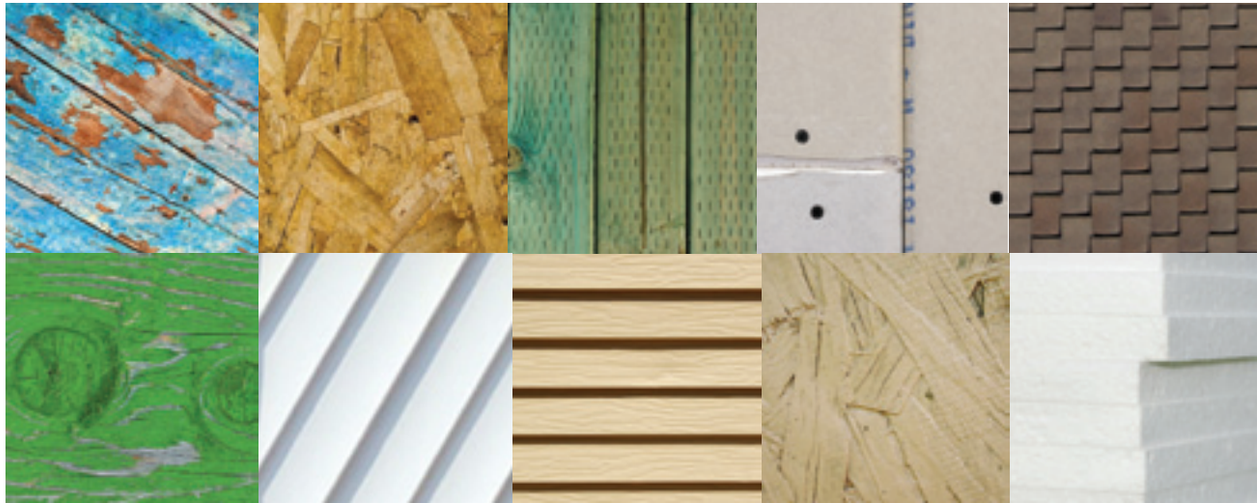
Ecology Action Centre

RRFB NOVA SCOTIA



Construction & Demolition

Waste? NOT! TOOLKIT



An Introduction to the "Waste? NOT! Toolkit

Too much of the waste in Nova Scotia's landfills comes from construction and demolition projects. The Ecology Action Centre has teamed with RRFB Nova Scotia to create the "Waste? NOT!" Toolkit in an effort to address this issue. It will help homeowners, businesses, contractors, suppliers and educators better understand how we can work together to identify and change the unsustainable practices that lead to so much waste.

As Dean of NSCC's School of Trades and Technology, I work directly with programs relating to a broad range of industry clusters that deal with both the built and natural environments. Beginning with programs offered at the new Centre for the Built Environment opening in September 2010 at the Waterfront Campus, we are broadening and deepening trades and technology education in ways that will prepare learners to create a sustainable world. This evolution of skilled-trades education will build a solid foundation for 'green' jobs in Nova Scotia.

We can all make a difference when it comes to integrating more sustainable practices at home and work. I know the "Waste? NOT! Toolkit" will help all of us as we work toward better balancing the needs of the natural environment with the built environment.

Ron Farrell,
Nova Scotia Community College, Dean of the School of Trades and Technology
www.nscc.ca

The **Waste? NOT! Construction and Demolition Toolkit** was published in March 2010 by the Ecology Action Centre in collaboration with the RRFB Nova Scotia.

Disclaimer

The **Waste? NOT! Construction and Demolition Toolkit** is designed solely to suggest ideas and/or to raise awareness. In no way is the Waste? Not! Construction and Demolition Toolkit intended to offer professional advice or make any endoresements of any particular products, organizations or firms listed herein. Always check with municipal staff, building professionals, hazardous waste experts and/or certified engineers before undertaking any construction, renovation, building moving, deconstruction or demolition project. The Ecology Action Centre and RRFB Nova Scotia disclaim any responsibility or liability for any injury to person, loss, or damage whatsoever suffered by any person or organization that chooses to undertake projects inspired by this document.

Please Note: The resource lists included are not exhaustive and are subject to change.

Thank You

This booklet was inspired by the work of many people committed to improving building practices in Nova Scotia. We would like to thank everyone who took time out of their busy schedules to meet with us from across the province including C&D processing site operators, regional coordinators, waste educators, building owners, building movers, deconstruction contractors and homebuilders. Special thanks goes out to our generous and skilled Advisory Committee - they helped guide this project from start to finish.

Writing and Editing

Kim Thompson and Thom Oommen

Graphic Design

Aaron Harpell, Hammerhead Design

Funding Sponsors

RRFB Nova Scotia

Further information and resources

A wealth of additional information can be found at the online home of the Waste? NOT! Construction and Demolition Toolkit. Visit www.ecologyaction.ca/toolkit

Look for lists with contact information for:

- C&D processing sites
- Reused building material and fixtures stores
- Building movers
- Deconstruction contractors
- Adaptive reuse designers

You'll also find useful bibliographic and web-based resources for more in-depth information about the issues explored in this publication.

Remember to contact your local municipality, for information about where to take C&D waste, fees or with any other questions.

For complete municipal contact information visit: www.gov.ns.ca/snsmr/muns/contact or call (toll-free) 1-800- 670-4357.

If you have any comments or questions about the Toolkit please contact us at
wastenot@ecologyaction.ca
Tel. (902) 429-2202

Hazardous Waste: what to watch for

Building jobs can bring with them many health hazards. It is especially important to be aware of these hazards in renovation, deconstruction or demolition projects. Five of the most common health hazards found in these areas are: asbestos, silica, mould, lead and mercury.

Hazard	Health Risks	Where Found
Asbestos: impure magnesium silicate minerals which occur in fibrous form.	Airborne. If breathed into the lungs the sharp fibers can cause lung disease or lung cancer.	In many pre-1980s building products including insulation, fireproofing, acoustic ceiling tile, vinyl-asbestos flooring.
Silica dust: Basic component of rock and sand. Found in concrete, cement, mortar, tiles and bricks.	Airborne. Fine powder can damage the lungs and can cause the condition known as silicosis.	Generated through any process involving breaking, crushing or grinding silica containing materials like cement, stone, sand and clay.
Moulds: fungi that grow in damp environments.	Airborne mould spores and chemicals are released as part of their growing cycle and can cause health problems.	Can grow on virtually any substance, as long as moisture and oxygen are present.
Lead: a soft inexpensive metal common in many products but especially paint.	Neurotoxicant or brain poison. Can be inhaled or ingested.	Lead in homes primarily comes from paint and paint dust. Beware of white paint which could include lead.
Mercury: an element found in solid, liquid and gas forms.	Mercury is toxic in any form. In rare cases exposure can lead to death.	Mercury is commonly found in switches and thermostats in older homes. Fluorescent light bulbs contain mercury gas.

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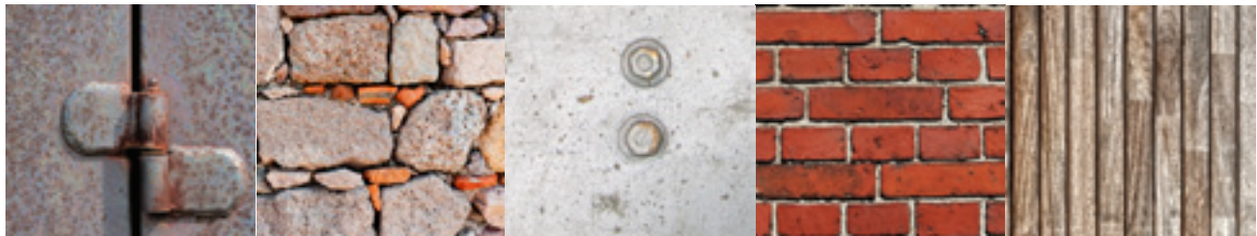
For information on building movers, deconstruction contractors, re-used building materials and fixtures stores and C & D processing sites visit the online home of the Toolkit: www.ecologyaction.ca/toolkit



The Elephant in the Room

We all know about the green cart and the blue bag but waste from construction, demolition and renovation projects is the elephant in the room – a huge issue but rarely noticed.

Asphalt shingles, clean wood, drywall, metal, painted and composite wood, plastics, aggregates, drywall, and treated wood are estimated to make up 25-30% of all solid waste in Nova Scotia. This translates to between 175,000 and 200,000 tonnes in the province annually – a massive amount of waste by weight!

In order to reduce the expense and environmental impacts of creating new landfill sites, the Government of Nova Scotia has set out to decrease the amount of waste disposed per person per year to 300 kg by 2015. Because construction and demolition (C&D) material represents such a large portion of the total waste produced, homeowners, contractors, demolition experts and building professionals are all being asked to take action to reach this collective goal.

This reduction target is seen as achievable because so much of the C&D material slated for landfills can be reduced, reused or recycled by employing simple strategies that make sense economically and environmentally. The 3-Rs still apply!

Reduce: Assess the design and size of a building project at the outset to determine how the amount of construction material, and degree of demolition might be reduced.

Reuse: Renovation, adaptive reuse, deconstruction and relocation of existing buildings are alternatives to demolition that maximize waste diversion, generate income and contribute to local, green jobs today.

Recycle: Sort and dispose of C&D waste effectively to ensure that materials are able to be best processed and recycled for other uses.

The **Waste? NOT!** Toolkit is an evolving project intended to provide practical ideas and solutions for reducing C&D waste. The case studies and resource lists found in this booklet are but a snap shot of what is happening in Nova Scotia in the field of construction and demolition today.

Check out the web site portion of the Tool Kit (**www.ecologyaction.ca/toolkit**) for current information and additional resources.

Good luck and we hope you find the information in the Toolkit helpful.

Kim Thompson and Thom Oommen

Shifting to Green: questions for building professionals

Building professionals are responsible for not only purchasing building materials they are also responsible for removal of that which is not used at the end of a job. These are often "hidden" financial and environmental costs on a project.

Another hidden cost lies in material purchases. Once building materials have been paid for, a client may want to retain unused materials, or "sell" them back to the contractor when a project is completed.

It is recommended that clients incorporate basic questions about C&D waste into the description of work they ask a builder, contractor or an architect to take on.

Expenses associated with the processing of construction and demolition waste vary across the province. These are generally incorporated into a contractor's bill and charges can range from $30 per tonne for sorted materials to more than $200 per tonne for mixed loads!

Working together, clients and contractors can develop efficient plans to reuse materials, minimize project waste and save money.

A typical 300 square foot kitchen renovation can generate enough waste to fill a room 10'x10'x7'—28 cubic yards of debris (Venolia and Lerner 2006).

Friendly, clear communication helps ensure that best C&D waste options are being applied.

When choosing a contractor, consider asking the following questions:

- Do you have experience with deconstruction, salvaging and job-site recycling?
- What steps are you taking to minimize C&D material going to the processing site?
- Will you sort the material before it is processed? If yes, then where and how? If no, then why not?
- How much C&D waste material do you estimate the project will generate?
- How much will it cost to dispose of this material?
- Which C&D processing site will materials be sent to? Can you show me the weigh bills so I can see how much we are diverting from landfill?
- Will you be reusing any of the leftover materials in future projects? Where will you be storing these materials?
- Can you tell me if this project will produce any hazardous waste? What are your plans for keeping the area safe, and for disposing of this waste?

Keep checking in to make sure everyone is staying on track.

Setting Up a Sorting System

Every new building, renovation, deconstruction and demolition site is different. This means that the materials and logistics for an on-site waste sorting system will be unique as well. There are however some basic practices that can make sorting easier. Being organized saves time and money on every project.

Choosing bins

Dumpsters generally come to mind when thinking of managing C&D material. However, they require a large volume of material to justify their use, and they do not always contribute to good sorting practices. Sizing bins and containers to suit a project is an efficient way to approach C&D material. Depending on the project bin options could include:

- Cardboard boxes
- Garbage cans
- Buckets
- Lobster crates
- Plastic tubs
- Burlap bags or strong plastic bags
- Anything else that works!

These containers can be reused from project to project.

Sorting is about space

In addition to choosing appropriate bins, organizing available space is equally important for successful sorting. With a lot of room, materials can be separated into many bins. With a smaller area it makes sense to focus on those streams with the most recycling potential; for example clean wood and metal are the most valuable to recyclers.

Space	Materials
No space	1. Keep all C&D material together. 2. Sort it out later if possible. 3. Make daily trips to processing and reuse sites.
Some space	1. Focus on the most valuable materials and set up containers for them. 2. Make frequent trips to processing and reuse sites.
Large space	1. Separate all waste types into different containers for easy and efficient sorting. 2. Make trips to processing and reuse sites as needed.

Remember: cardboard is not C&D material. If used to transfer C&D goods clean cardboard boxes and packaging should later be broken down and recycled along with blue bag items.

Before You Build

Reduce

Early planning for new construction, renovation or demolition projects can dramatically reduce the amount of C&D waste entering landfills and save money.

Design decisions play a huge role in minimizing the amount of waste generated on a building site. Designing small and smart has enormous positive environmental and economic impacts.

"In residential construction 6-8% of the total weight of the building materials delivered to the site typically ends up as waste." *(Venolia and Lerner 2006)*

Questions to Consider

Renovation and New Construction

- What are the possibilities for reusing existing materials to complete the project?
- Does the project design use standard material sizes in order to minimize cut-offs and waste?
- Can materials be salvaged during the construction process and then reused within the same project?
- How accurate can numbers for quantities be when purchasing?
- Is there a choice of materials which uses less packaging?
- What might local salvage/building reuse centres have that could be used in the project?

Building Removal

- Who might have use for waste materials being generated on the project?
- Is it possible to hire a deconstruction professional, instead of a demolition expert?
- What are the options for moving the building rather than demolishing it?
- Is an addition to the existing structure an alternative to demolition and reconstruction?

Deconstruction takes more time, but is more environmentally responsible, can generate income for the project, create local employment, and is great for public relations.

Identifying C&D opportunities even before a project begins always saves time and money.

The Challenge:
"How much space do I really need?"
"How small can this building be and still meet my goals?"
"Can I spend on beauty and function in details, rather than size?"

Reuse and Renovate: work with what you have

Adaptive reuse means taking a building that had one use and transforming it for another. Often this means zoning, design and structural changes, but ultimately the building still stands and many tonnes of construction material stay out of the landfill. If the "bones" of a building are sound there can be a lot to work with.

Examples of adaptive reuse are everywhere including heritage homes converted to elegant apartments, retail stores or cafes. Schools, churches, office buildings and warehouses originally constructed for a specific use once renovated can find new life serving a completely different purpose years later.

Many architects and designers thrive on the challenges presented with adapting an existing structure to create unique living and working spaces.

The following are some examples of renovation and adaptive reuse from Nova Scotia.

The Ecology Action Centre

2705 Fern Lane, Halifax, NS
Design: Peter Henry Architects
with EAC New Home Committee
Building constructed circa 1890.
EAC renovations 2005.

When the Ecology Action Centre (EAC) was searching for a new home in 2005 they chose adaptive reuse over building new. "We made a deliberate choice to work with an existing building and to reduce the amount of waste going to landfill" said Internal Director Maggy Burns.

Ecology Action Centre (photo Bob Kerr)

A suitable home was found on Fern Lane in the north end of Halifax. First built in the late 1800s for residential use, it later housed O'Malley Electric, an electrical supply company. At the time of purchase the building contained offices and a warehouse on the main floor with rented rooms upstairs.

When the EAC took ownership, the building was completely gutted and redesigned to accommodate thirty staff, numerous

Remember to check with an engineer before embarking on an adaptive reuse project. New uses can mean new loads on walls and systems which may require additional support.

Sort and $ave: turn trash into gold

On visiting a C&D processing facility for the first time, it can be surprising to see the amount of hand sorting involved with nearly everything arriving there. While this work makes for job creation opportunities, having loads arrive pre-sorted from job sites translates into big savings for taxpayers, contractors and processing site operators. In contrast, mixed loads reduce the quality of materials and their ability to be recycled. Recycling opportunities are dramatically increased with sorted loads.

At many C&D facilities the charge for accepting unsorted loads is increasing. For instance in 2010, the Lunenburg Regional Community Recycling Centre was charging $75 per tonne for sorted C&D waste while mixed loads were charged more than double at $175 per tonne.

Asphalt shingles and rubble can be heavy in comparison to other C&D materials so it pays to keep these separate and reduce processing fees. Some C&D processing sites offer a discount on sorted aggregate because of its weight. Most aggregates can also be used as clean fill on site.

Sorting C&D material is done most easily at the job site where it is produced. Systems which work best are: simple, easily accessible, labeled, and regularly disposed of.

Banned Items

The following items are banned from Nova Scotia landfills and C&D processing sites:

- Redeemed beverage containers
- Corrugated cardboard
- Newsprint
- Steel/tin and glass food containers
- Used tires, rims removed
- Lead acid (automotive) batteries
- Compostable, organic material and leaf and yard waste
- Waste paint
- LDPE and HDPE bags and packaging
- Televisions
- All computers, computer components and printers
- Audio and video playback and recording systems, telephones and fax machines, cell phones and other wireless devices

Remember to separate items like caulking tubes, gloves, packaging, beverage cups, food and cigarette packs, newspapers etc. from C&D materials. C&D processing sites will reject non-C&D debris - these materials should be disposed of according to local regulations.

Scenes from C&D processing sites (photos Kim Thompson)

Waste	Type Includes	Reuse	Recycling	Occurs	Value
Plastic	Vinyl siding, Styrofoam insulation, carpet	Carefully removed vinyl siding and rigid insulation can be reused.	Some plastics are recycled. Most plastic materials are chipped and added to landfill.	Common	Minimal
Treated wood	Pressure treated and wolmanized lumber, creosote timbers	Treated wood can be reused but may need to be certified for structural purposes. **Never** burn treated wood as the glues and additives are toxic.	Wood is chipped and added as landfill cover.	Occasional	Minimal
Brush	Trees and shrubs removed during construction.		Brush is unsuitable for biomass fuel due to its moisture content. Usually it is chipped and used as mulch.	Occasional	Minimal

Volume vs. Weight

Calculating waste by weight can be deceptive. The volume of materials also matters in waste reduction. For instance, a small pile of concrete may equal the weight of a massive pile of vinyl siding. Which would fill a landfill faster?

offices and meeting rooms. In addition the building was retrofitted with the latest energy efficient technologies and simple low-tech solutions to reduce the organization's ecological footprint.

The renovation aimed to creatively reuse as much material as possible on site or to recycle items, like valuable metal, whenever possible. Electric baseboard heaters, reusable wood, acoustic panels and other items were donated to the Habitat for Humanity ReStore or claimed by some of the 150 volunteers. In the end, the largest waste stream was generated through plaster removal - comprising 9.3 tonnes.

Train Station Inn

21 Station Rd, Tatamagouche, NS
Design: James LeFresne (owner)
Constructed in 1887. Inn opened in 1989.

When James LeFresne bought the old Tatamagouche Train Station in 1974 his only goal was to save a heritage building that he had loved since his childhood from the wrecking ball. Now he has transformed this Victorian train station into a world renowned Inn welcoming hundreds of visitors every year. By doing so, he and his wife have contributed to the local economy of a rural Nova Scotia community.

The Tatamagouche Train Station was constructed in 1887 by Intercolonial Railway. The lower floor housed offices, baggage areas and waiting rooms, and the upper floor was home to the station master and his family. Many trains once passed through Tatamagouche and across Nova

Train Station Inn (photo James LeFresne)

Scotia and the strongly constructed brick station was built to last.

Today visitors can stay in the restored station master's quarters as they would have looked a century ago. Building on the rail theme, James has also purchased two heritage boxcars and seven heritage cabooses including one constructed for past Governor-General Earl Grey. All offer world-class rooms and a unique experience.

Though no specific numbers are available it's estimated that through adaptive reuse of the Tatamagouche Train Station several hundred tons of demolition waste was saved from the landfill, not to mention all the materials contained in the rail cars.

Recently James and his wife purchased the local grain elevator and have plans to transform this unique structure into an artisans' co-op. Adaptive reuse is thriving in Tatamagouche.

Deconstruct: take it down, piece by piece

The deconstruction of buildings is experiencing a comeback in Nova Scotia as the value of materials being lost to landfills becomes increasingly apparent and as the costs of disposal increase. In addition many homeowners appreciate the unique look of salvaged materials in their homes. Deconstruction means taking down all, or parts, of buildings piece by piece for reuse. Conversely demolition projects crush and mix materials on site, making them largely unsuitable for reuse or recycling.

All buildings contain reusable and valuable building materials and fixtures. For the deconstruction professional these materials mean profit. Heritage buildings in particular may have doors, fireplaces, studs, hand-hewed beams and entire structural timber frames that are of value.

Planning ahead is essential to successful deconstruction projects. This means:

- Making lists of all materials that are part of the building project.
- Identifying where these materials can be sold or donated for reuse or recycling.
- Ensuring there is appropriate storage space for materials once removed.
- Making a schedule that gives enough time for disassembly.
- Identifying experienced deconstruction trades people.
- Creating a contract with trades people with specific project details and timelines as well as identifying developing a strategy for hazardous materials, if applicable.

Timber framers and deconstruction professionals often conduct retail sales or auctions on site to the general public. Sometimes they operate reuse stores or post materials online buy and sell sites.

Visit www.ecologyaction.ca/toolkit for a list of deconsruction contractors.

Defense Construction Canada

PMQ Deconstruction , CFB Greenwood Greenwood, Nova Scotia

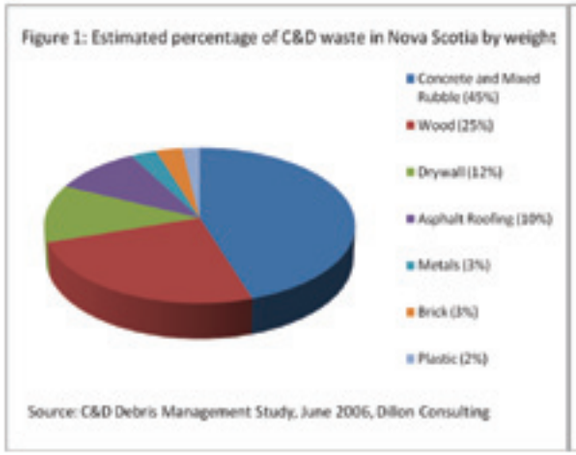
One of Canada's biggest deconstruction champions is Defence Construction Canada. Between 2001 and 2007, the crown corporation deconstructed 500 units of permanent married quarters (PMQ) at Canadian Forces Base (CFB) Greenwood in the Annapolis Valley. "Our idea was to keep as much stuff out of the landfill as possible", said Joseph Colp of Defence Construction Canada. The project achieved a diversion rate of 80% by weight.

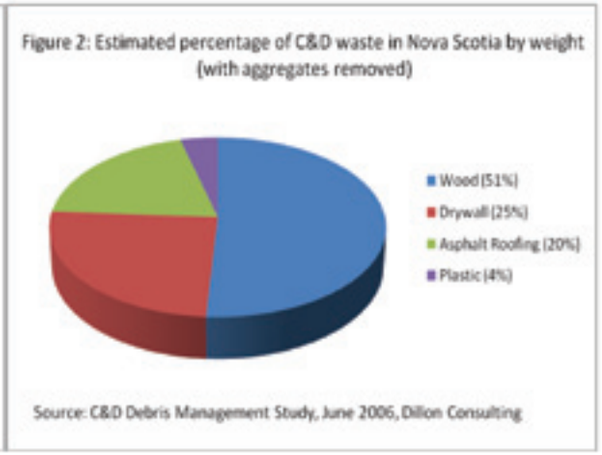
Thanks to increased salvage opportunities and the resale of recovered materials, many deconstruction contractors are able to outbid demolition contractors. Deconstruction takes more time but employs more people and maximizes resource recovery when compared to demolition.

Waste	Type Includes	Reuse	Recycling	Occurs	Value
Metals	Bracing, electrical boxes, wiring, aluminum siding, metal roofing, railings, rebar.	Some metal products can be reused in other projects.	Metal can be melted down to be reused in other applications.	Common found in smaller quantities	High
Aggregate	Rocks, bricks, mortar, asphalt, cement, concrete free of reinforced steel.	Bricks can be cleaned and reused; if being used structurally they may need to be certified by an engineer; Most aggregate can be used as clean fill on site.	Aggregate can be crushed and used at disposal sites for road surfacing and traction and as clean-fill. Some aggregate can be resold.	Common in demolition	Moderate
Asphalt shingles	Asphalt shingles	Used shingles have minimal reuse potential, however ends of bundles can be mixed and matched for other projects	Halifax C&D Recycling has a processing system which separates the tar for fuel and the sand for road construction. Shingles are also chipped and used for road and trail cover.	Common from roofing	Moderate
Composite and painted wood	Plywood, chipboard, painted wood	De-nailed, dry pieces can be reused on other projects	A small portion of wood for biomass can include this type.	Occasional	Moderate
Drywall and Gyproc	Drywall and Gyproc	Currently drywall has few reuse markets in Nova Scotia. Dry, undamaged material can however be reused.	Drywall can be crushed and used as part of a landfill cover.	Common	Minimal

C&D Debris: many different types

Construction and demolition waste comes in many different forms. Measured in weight, the most common C&D materials in Nova Scotia are aggregate, wood, drywall and asphalt shingles (see figures 1 and 2 below). Many of these materials can be reused or recycled.





The following list identifies common ways of sorting C&D materials. Call first to find out what is accepted at your local processing site.

Waste	Type Includes	Reuse	Recycling	Occurs	Value
Clean wood	Framing lumber, lathe, cedar shakes, wood flooring.	De-nailed wood can be reused as is or re-milled. It may need to be certified for structural applications. Clean wood can be burnt in wood stoves.	Wood is chipped and de-nailed and sold to private industries in the province as biomass for fuel. Chipped wood can also be used as mulch or trail cover or in large composting operations.	Common, found on most sites	High

In Nova Scotia, waste management professionals estimate that approximately 20% of all C&D waste comes from new construction, 20% from demolitions and 60% from renovations.

CFB Greenwood's PMQs were constructed in the 1960s for base personnel. Some were duplexes but most were row houses.

Deconstructing PMQs (photo Joseph Colp, Defence Construction Canada)

Over time mould became a concern and asbestos was discovered so the decision was made to remove the units. Deconstruction was selected as the first option.

Mid Valley Construction headed up much of the project. This led to the company opening Happy Joe's, a building materials reuse store through which many of the salvaged building materials and fixtures were sold. Other materials were recycled through a local C&D processing site and some aggregate was stored and reused at the base.

Baltic Woodworking

Timber Framer, General Contractor
Turner's Barn Residence
Jeddore, Nova Scotia

Originally a boat builder, Kim Aaboe, owner of Baltic Woodworking, combines traditional woodworking skills with modern methods and an appreciation for preserving older buildings. In 1995, he was contracted to deconstruct an 1834 building known as Turner's Barn and rebuild it further along the Eastern Shore as a private home. The client was enthusiastic about saving an existing structure in her community rather than building new.

Turner's Barn before deconstruction (photo Kim Aaboe)

In the end the building was a combination of conventional stick, and timber frame construction – combining the two systems added unique structural components to the project.

Originally designed as a single residence it has since been transformed into two apartments. The future is bright for a building first constructed in 1834!

Relocate: move a building

Moving buildings is an old tradition in Nova Scotia. Today however, demolition is the first option for removing buildings and moving them is a nearly forgotten art.

While more common at a time when there were fewer power lines, and when the labour and materials invested in buildings was more highly valued, there are still professional movers scattered across the province. Often these are family businesses that have generations of experience.

Relocating a building takes good planning but is an excellent option for waste conscious, creative contractors and their clients. An experienced building mover can provide estimates and insurance, and address details around moving a variety of structures. For example multiple storey buildings with balloon framing and buildings with brick structural walls are generally more difficult and expensive to move than an uninsulated cottage.

Some things to think about if considering moving a building:

- Identify an experienced moving professional.
- Obtain permits for the new site and for the move.
- Secure insurance with the municipality for the period of the move.
- Contact Nova Scotia Power about the move route to determine if wires need to be lifted.
- Remove masonry chimneys prior to moving.
- Consider if a police escort is required.
- Buildings, or building sections cannot be wider than 24 feet and height restrictions may apply.

A minimum of three months is recommended to prepare for negotiations and permits. Municipal offices have information on local moving regulations.

Visit www.ecologyaction.ca/toolkit for a list of building movers.

The Morris Building

Halifax, Nova Scotia
Owner: Heritage Trust of Nova Scotia
Mover: S. Rushton

Original site of Morris building (photo HRM)

Halifax's fourth oldest building was moved in December 2009. This was the second move the Morris building had undergone – the first being in the 1860s. As circumstance would have it, it will be moved one more time later in 2010.

Reuse Stores: finding buried treasures

Most regions of the province have small businesses that receive and sell used building supplies, appliances, furniture and fixtures. These items generally come from new construction, renovation, deconstruction and demolition projects. Some companies focus on antique and vintage building materials and fixtures while others will accept almost anything. These businesses hearken back to times when materials were so valuable that they were stored for reuse. "One person's garbage is another one's gold."

If useful materials have been salvaged from a project and:
- they can't be reused within the project that produced them or;
- an interested party has not been identified through the online material exchange lists

then donating them to a reuse store is a good option.

Not everything leftover at the end of a project has value or a place in a reuse centre, so it is important to call ahead to ensure they will accept the materials being offered, and to ask if there will be collection charges or other fees. If there are items they cannot accept they may know of someone else that can use what you have.

Visit www.ecologyaction.ca/toolkit for a list of reused building materials and fixtures stores.

C&D items which cannot find reuse in the community go to a C&D processing site. Loads which arrive sorted are charged reduced tipping fees. Sorting Saves Money!

Reused ceiling lights (photo Joseph Colp, Defence Construction Canada)

Piles of used door knobs (photo Bob Kerr)

Salvaged doors (photo Kim Thompson)

Online Materials Exchange

Many regions have local classified newspapers for the buying and selling of goods. Publications like Bargain Hunter and the Maritime Merchant list materials available or wanted and can be used to sell or give away reuseable C&D material and fixtures.

Expanding on these publications the Internet is now facilitating the sharing and reuse of construction and demolition materials. Once destined for the landfill now one person's excess goods can meet another person's needs.

Free to use websites like Kijiji and Craigslist connect individuals, businesses, builders and contractors; it's even possible to make a bit of money if items are in demand. Websites with mailing lists like Freecycle also exist to facilitate the free trading of goods.

Kijiji

Kijiji is a phenomenon across Nova Scotia. It offers the free posting of sale or wanted items after a simple registration process. It facilitates the sale of thousands of used items daily saving many trips to C&D processing sites.

Check out: www.kijiji.ca

There are local Kijiji sites for: Annapolis, Bridgewater, Cape Breton, Halifax, New Glasgow, Truro and Yarmouth

Freecycle

Freecycle connects individuals who have goods to offer or are looking for specific items. Membership is free and all trades must be free with no money changing hands. Specific guidelines and instructions are available when signing up.

The global Freecycle network is well established in Nova Scotia. Groups are active in Cape Breton, Dartmouth, Digby, Halifax, Hants County, Kings County, Lunenburg County, New Glasgow, Queens County, Sackville, Truro-Colchester County and Yarmouth.

Check out: www.freecycle.org/group/CA/Nova%20Scotia

Craigslist

Halifax has a local Craigslist website. Craigslist is a simple to use website that allows individuals to post items for sale. Though arguably not as popular as Kijiji and Freecycle, Craigslist is another way to redistribute reuseable C&D waste simply and inexpensively. Offer it for free to move it fast.

Check out: halifax.en.craigslist.ca

Built around 1760 the Morris building served as the office of Halifax's first Chief Surveyor and is steeped in Nova Scotia history. Originally slated for demolition to make way for a condominium development at the corner of Morris and Hollis streets, the building owner, at the behest of several community groups, reassigned funds for demolition and tipping fees, and applied them towards moving the building.

Numerous organizations including the Heritage Trust of Nova Scotia, the Ecology Action Centre, Halifax Regional Municipality, Nova Scotia Community College and the Province of Nova Scotia have been involved in the Morris project. Saving the Morris building provided a rich living laboratory for learning about how environmental, cultural, social and economic interests can be addressed in an integrated way.

Peter Delefes, the Chair of Heritage Trust of Nova Scotia said: "By saving the Morris building not only are we maintaining a link to our past but we are making a commitment to our future." It's estimated that 100 tons of building material was rescued from the landfill by this move.

Chanterelle Inn and Cottages

St. Anne's Bay, Nova Scotia
Owner: Earlene Busch

In 2009, Cape Breton's Chanterelle Inn and Cottages was named to the National Geographic Traveler magazine's list of eco-friendly places to stay.

In addition to sourcing local food and choosing local building supplies, the moving of three cottages to the site contributes to its reputation for sustainability.

Chanterelle cottages (photo Kim Thompson)

In 2004 Busch found herself at an auction in Ingonish. The auction was at a property with 25 uninsulated summer cottages built in the 1950s. She bought three of the 25 cottages for $300 each and had them moved to Stannis Bay. Only one other cottage on the property was sold. Sadly the other twenty-one were demolished.

The addition of the renovated, energy efficient cottages offers a more private experience for guests of the Chanterelle Inn. Bricks from the original chimneys were used for paths. The original wooden porches were deconstructed and the wood used to build cabinetry. Busch remarks, "The wood in the cottages was so beautiful. If I'd had more buildable area near the Inn I would have definitely brought in more buildings".

New Life: reusing materials

Reusing building materials saves money and can give a creative edge to projects. Many materials that might end up in the landfill can be used for purposes they were never originally designed for. Below is a short list with a few ideas for material reuse. Internet searches will unearth countless other uses for specific materials.

Bricks:

- Beautiful garden walls and paths have been made with old bricks for centuries.
- A brick bookcase is easily made with a few bricks and planks of wood.
- Interior brick flooring is a unique design feature.
- Bricks provide excellent thermal mass when placed near a heat source.
- Quality old bricks can be used to build an outdoor fireplace.

Clean Wood:

- Longer lengths of lumber can be stored and used for other projects.
- Short pieces of lumber can be used in a woodstove.

Radiators:

- A farmer in the Annapolis Valley built a solar hot water system using recovered radiators to heat his chicken barns.
- Radiators are heavy and have been used as boat moorings.

Stone:

- Flat stones make wonderful garden paths.
- Larger block stones can be used to build attractive stone fences or retaining walls.
- Drainage problems around a property? Rubble trenches are one answer that can help.

Windows:

- Can be used to construct cold frames or small greenhouses.
- Windows added to interior walls let light into darker indoor spaces.
- Old windows make unique picture frames or see-through cabinet doors.

Ceramic Tiles

- Broken tile can be used to create unique mosaics.
- Old tile is considered aggregate and can be added to rubble trenches.

Concrete

- Broken concrete, sometimes called “urbanite”, can be used in foundations or as clean fill.
- Filling metal mesh cages with broken concrete rubble makes a “gabion wall”. These are used primarily for retaining walls.

Carpet:

- Old carpet laid over grass or weedy areas kills unwanted plants and prepares the ground for a new garden.
- Paths can be kept weed-free by covering them with old carpet. They are then “dressed” with mulch or stone to blend them into the landscape.

Vinyl siding:

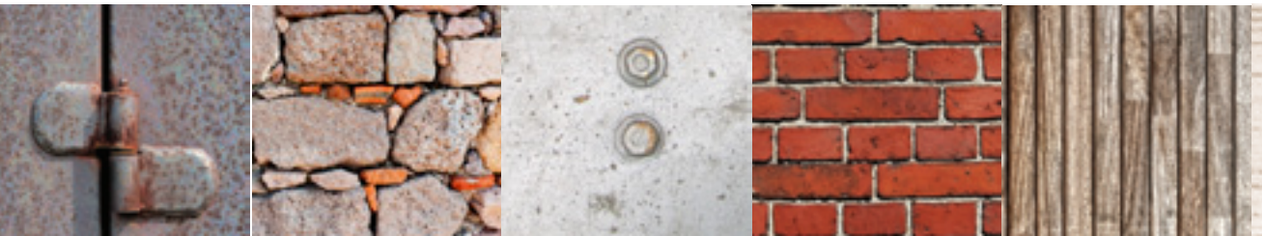
- Siding that is in good shape sometimes finds a new home if offered through online “buy and sell” resources.

Additional Resources

Corson, Jennifer, 2000.
Resourceful Renovator: A Gallery of Ideas for Reusing Building Materials.
Key Porter Books

The Resourceful Renovator television series. Available through Solterre Design www.solterre.com or Renovator’s Resource www.renovators-resource.com.

Greenhouse constructed using old windows (photo Jennifer Corson)



Remember that after exposure to the elements and over time some materials are unsuitable for reuse, no matter how good they look. If in doubt ask a professional. “Better safe than sorry”.