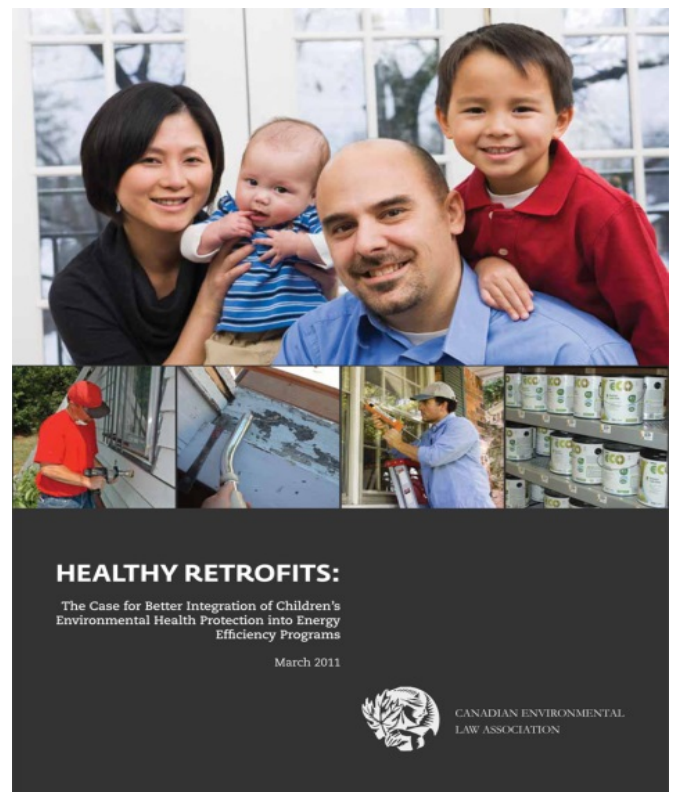


The “Healthy Retrofits” Project:

Avoiding children’s health risks during energy retrofits and home renovations in Ontario, Canada.



Presentation to:

***CAPTURING THE MULTIPLE BENEFITS OF ENERGY EFFICIENCY -
IEA-EEA Roundtable on Health and Well-Being Impacts***

April 18, 2013

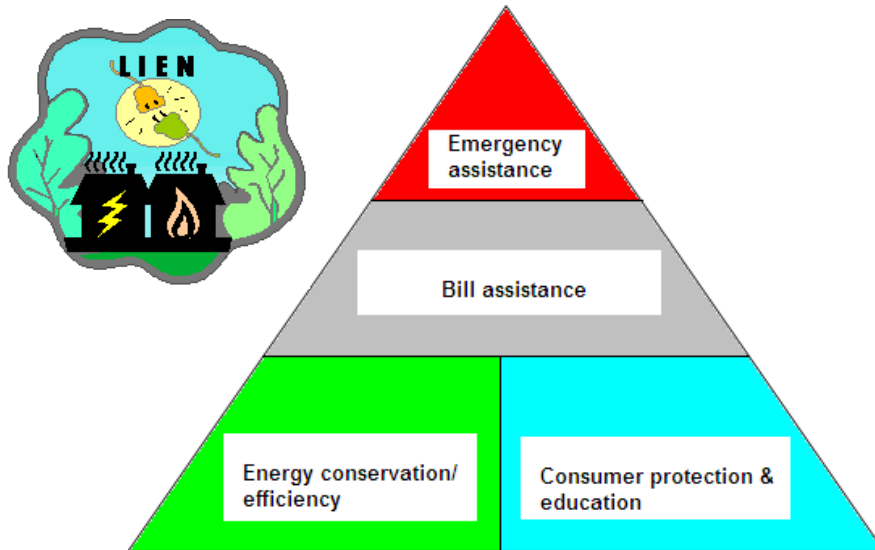
**Kathleen Cooper, Senior Researcher
Canadian Environmental Law Association**



Canadian
Environmental Law
Association
EQUITY. JUSTICE. HEALTH.

About CELA

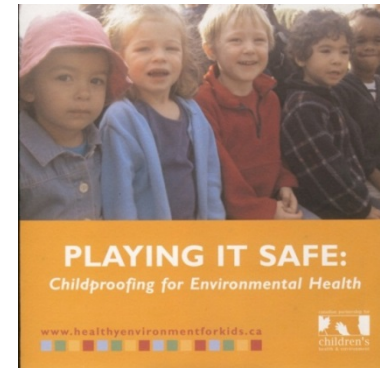
- Legal aid clinic; poverty law mandate
- Among our priorities:
 - **Human health effects of toxic substances, esp. among vulnerable populations**
 - **Addressing energy poverty**



canadian partnership for

children's
health & environment

“CPCHE”



La vidéo est également disponible en français.



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Context: Low income children at highest risk

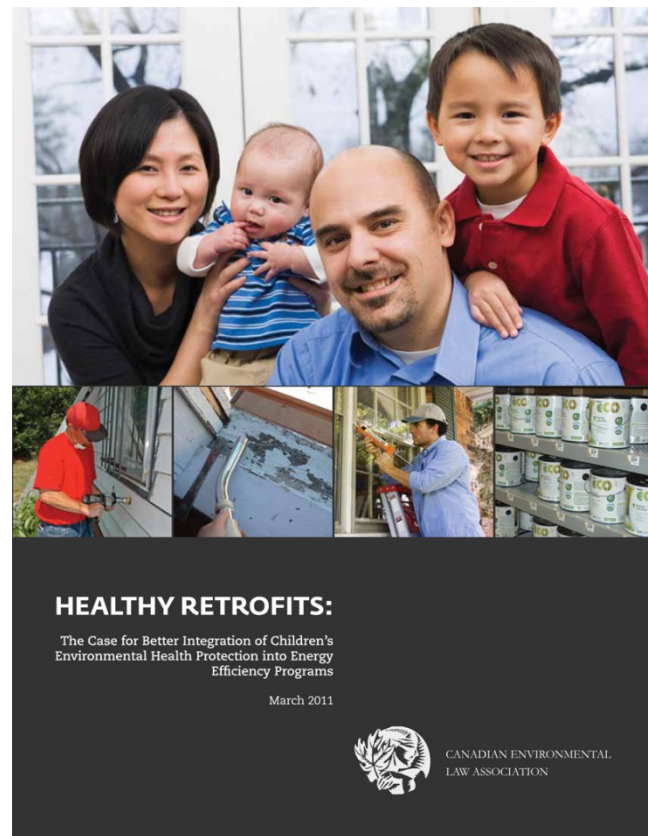


- Poverty – health risk unto itself
- Substandard housing, potential ↑:
 - Lead, Mould, (Radon), Pesticides
- Older/reused products, potential ↑:
 - PBDEs, PFOs, phthalates, BPA, etc.
- Higher baseline of exposure - Renovation activity can greatly increase some of these exposures



Healthy Retrofits

- Age of housing - linear correlation. Canada-wide, as SES drops, age of housing rises
- Potential exposures across all stages of renovations/retrofits
- Lack of awareness and training among energy auditors and in building trades but strong interest in better integration
- Despite possible health risks, with greater awareness, are easy and low-cost measures can prevent exposure (with some exceptions)
- Very positive outcomes: The “win-win” of renovations/retrofits that make homes more energy and cost efficient *and* healthier for children and their families
- “Green” building and renovation is not necessarily always “healthy” but it can and should be



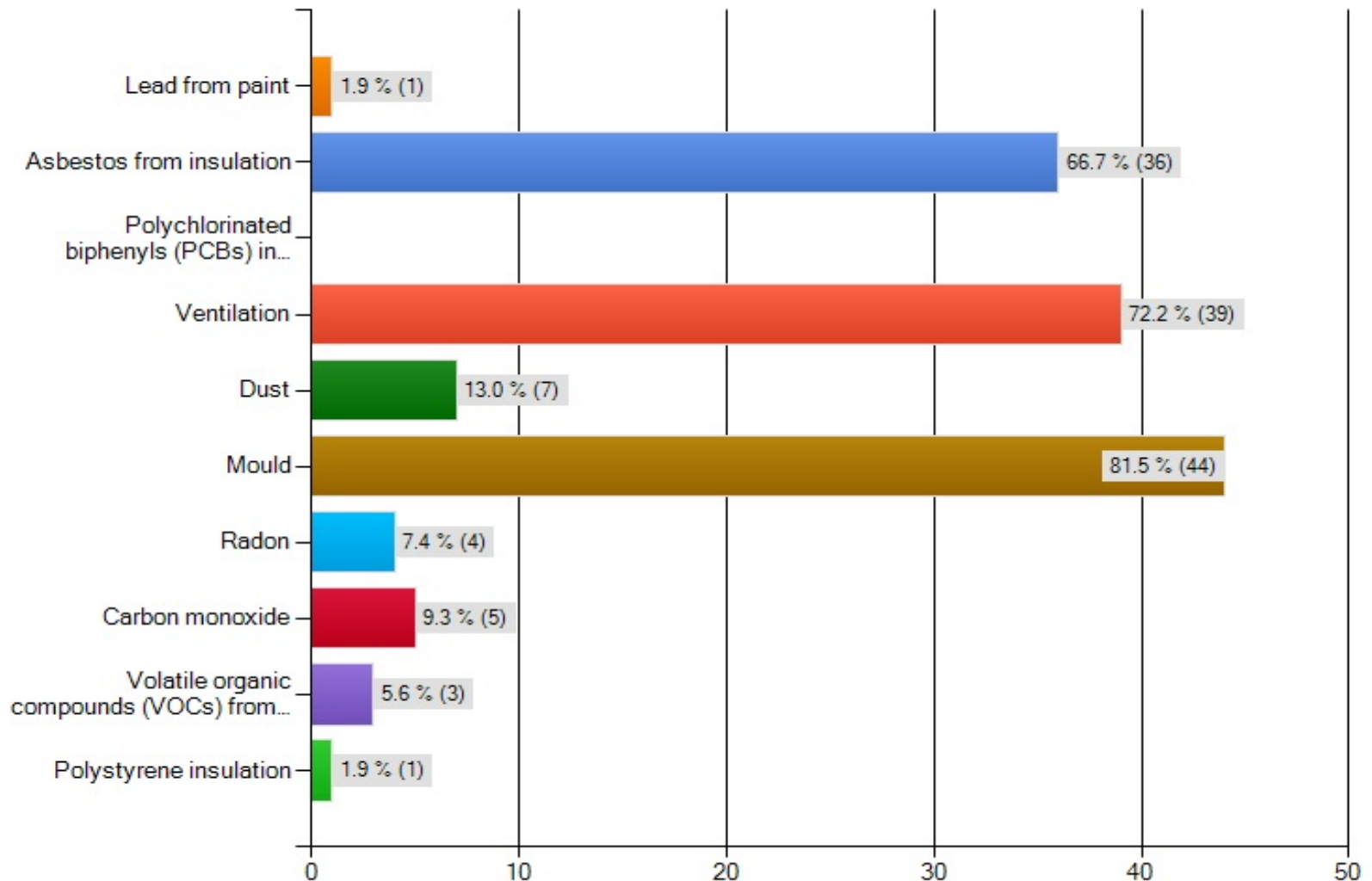
Indoor environmental hazards potentially associated with renovations/retrofits

- Legacy hazards: **lead**, asbestos, PCBs
- Inadequate ventilation: Mould, carbon monoxide, (radon)
- Building materials: solvents in adhesives, caulking, paints and other VOCs in insulation, etc.
- After retrofits: exposures from consumer products (and radon) where ventilation reduced



Energy auditors' experience of home/building owners and residents inquiring about IEH issues

If yes, what are the most frequently raised concerns or questions asked?



Lead in paint: Still a pervasive hazard

- In Canada, any pre-1990 buildings can contain lead
- Pre-1978 can have very dangerous levels
- Policy vacuum in Canada
- Low income circumstances increase risk
- Overlap between legacy hazards and ventilation issues – e.g., where moisture unaddressed, can increase lead exposure
- As important for adults as children (lifelong cardiovascular disease risk)
- Workshop attendee – in “green” building industry for 25 years and unaware that lead in old paint was a problem



Outreach: Combining renovation and retrofit messages



Renovate right

www.renovate-right.ca



4 Steps to a child healthy home repair or energy upgrade

Canadian Partnership for Children's Health and Environment

Renovating an older home?
Take extra care if your home was built before 1990. Paint in older homes often contains high levels of lead. Lead is toxic, especially to the developing brains of children, including in the womb. Old caulking may contain PCBs (highly toxic chemicals). Asbestos may be present in old tiles, shingles, insulation and heating duct tape. Get professional help to remove asbestos materials safely.

1 Isolate the work

- Whenever possible, pregnant women should not do home renovations and should stay out of areas being renovated. Kids should stay out too.
- Remove belongings from the work area. Completely cover whatever is left with plastic sheets. For wall-to-wall carpeting, completely cover with drop sheets.
- Ensure the work is done when the furnace or air conditioning is off to avoid blowing dust or fumes through the home.
- Tape durable barriers such as wood or heavy cardboard over air ducts.
- Tape plastic sheets over doors and other openings. Check often for leaks.

Regular house dust contains low levels of toxic chemicals. Renovation dust contains much higher levels. It is especially important to protect babies and children from exposure to harmful chemicals in dust.

2 Bust that dust

- Clean the workspace daily to control dust. In the work area, use a shop vacuum fitted with a filter and bag for capturing fine particles. Or, use wet rags, a damp mop, or a broom and sweeping compound. Outside the work area, use a vacuum with a HEPA filter.
- Throw out rags that have been used to clean up dust. Store brooms, mops and vacuums away from other household items.
- When removing waste, use sealed bags or covered boxes to keep dust contained.
- Don't remove old paint from windowsills, walls and other surfaces (it often contains lead). Instead, cover with a good quality primer before repainting, or get rid of old painted materials.
- Take care not to spread the dust around. Change out of work clothes and shower before sitting on furniture, cooking or playing with children. Use a separate hamper for work clothes and wash separately from other laundry.

3 Choose & use products carefully

- When possible, choose renovation products that won't give off strong fumes. Look for quick-drying and VOC-free or low-VOC caulking, paints and glues.
- Choose flooring and other materials that have factory-applied stains and coatings.
- Choose smooth flooring products, instead of carpeting, to allow for easy dust cleanup.
- Whenever possible, choose products with the fewest hazard symbols. For products with hazard symbols be sure to follow label instructions carefully.
- Tightly seal all opened product containers, store them out of reach when not in use, and dispose of any leftover products as hazardous waste.

Volatile organic compounds (VOCs) are in many products, including caulking, glues and pressed wood. Products with VOCs often have a strong chemical smell. Many VOCs are harmful to human health.

4 Take care of the air

- In addition to careful dust control, use a window fan, facing outdoors, to force any airborne dust and fumes outside.
- Keep windows open after the work is done until the fumes are gone. Open windows regularly to bring in fresh air.
- Add ventilation when upgrading kitchens and bathrooms to avoid problems with mould.
- Install carbon monoxide detectors and test for radon.
- Reduce the use of products with strong fumes and fragrances.

Are you a tenant?

If your building manager or landlord is planning to renovate your home, become involved. Start off by giving them a copy of this brochure. Let them know that there are simple actions they can take to protect your family's health. Keep written notes of any conversations. Questions? Click on "tenants" on CPCH's renovate-right.ca.

www.healthyenvironmentforkids.ca



Energy retrofits help to cut drafts. But homes that are too tightly sealed can lead to higher indoor air pollution, or mould from excess moisture. Adding ventilation and eliminating moisture sources and leaks are some ways to prevent these problems. For more, visit renovate-right.ca.

Most commonly spoken languages according to Canadian Census

Arabic, English, French, simple Chinese, Punjabi, Spanish, Tagalog

Supportive on-line content and collaboration with service providers

On-line: More detailed resources

For **tenants:**

- E.g., How to participate in energy upgrade programs for low income residents

Collaboration:

- Municipal building departments
- Utilities updating their health and safety policy for retrofit program implementation
- Retailers, do-it-yourself crowd, and TV renovation shows – much tougher to influence

www.healthyenvironmentforkids.ca



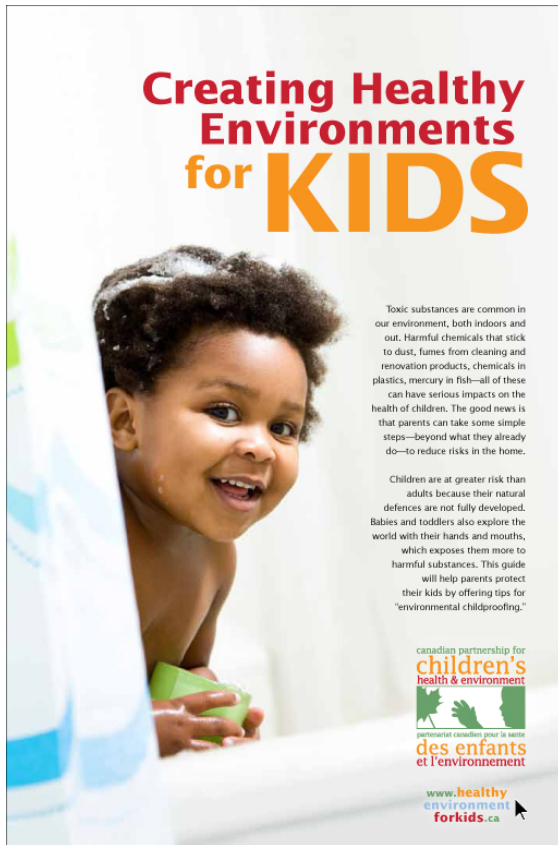
How to make sure a home repair or energy upgrade is **child healthy**



www.healthyenvironmentforkids.ca

CPCHE's Top 5 tips for families

Brochure is expansion of “renovate right” pillar within parallel educational project



La vidéo est également disponible en français.

Brochure, video,
more details on-line



Bust that dust



Renovate right



***Go green
when you clean***



Dish safer fish



***Get drastic
with plastic***

Sixth Tip -



Reduce radon

www.reduceradon.ca

- Naturally-occurring radioactive gas; infiltrates foundations; site-specific
- 2nd leading cause of lung cancer in Canada
- Easy three-month test; should not exceed 200 Bq/m³

Seeking co-benefits of integrating radon remediation with energy retrofits

- Feasibility study completed; radon remediation in low income communities
- Consulting with radon remediation specialists
- Planning a pilot: job creation; on-bill financing



Recommendations: program design; training, education/outreach; and policy

Programs

- “Building as a system”; funding for, and integration of, health and safety issues
- E.g., Include indoor env’l health issues in province-wide programs for low income weatherization

Training, Education/Outreach

- Expand beyond asbestos, mould, ventilation and air focus
- Seek means of reaching diverse audiences; agency coordination for programs and protocols (info, guidance, regulations)

Policy

- Expand product labelling requirements (substances assoc’d with chronic toxicity) to allow informed choice; integrate with trustworthy outreach information at point-of-sale
- Re-new/expand grant programs for energy retrofits; facilitate utility-sponsored on-bill financing programs

Selected References and Websites

Canadian Environmental Law Association (2011) *Healthy Retrofits: The Case for Better Integration of Children's Environmental Health Protection into Energy Efficiency Programs*
<http://www.cela.ca/collections/pollution/healthy-retrofits>

Cook JT (2010) *Energy Insecurity is a Major Threat to Child Health*. Policy brief prepared for Children's Health Watch, Boston Medical Center, Boston MA.
http://www.childrenshealthwatch.org/upload/resource/energy_brief_feb10.pdf

Federal Healthy Homes Work Group (2013) *Advancing Healthy Housing – A Strategy for Action*.

Manuel J (2011) Avoiding Health Pitfalls of Home Energy-Efficiency Retrofits. *Environ. Health Perspect.* 119(2): A76-A79.

US Environmental Protection Agency (2011) *Healthy Indoor Environment Protocols for Home Energy Upgrades: Guidance for Achieving Safe and Healthy Indoor Environments During Home Energy Retrofits*. http://www.epa.gov/iaq/pdfs/epa_retrofit_protocols.pdf

B.U.I.L.D.: www.warmupwinnipeg.ca

Low Income Energy Network: www.lowincomeenergy.ca

PCBs in Caulk in Older Buildings:

<http://www.epa.gov/wastes/hazard/tsd/pcbs/pubs/caulk/index.htm>

Union Gas (Ontario) Free Energy Efficiency Upgrade Program

<http://www.uniongas.com/helpinghomes/>

Weatherization Plus Health (US): www.wxplushealth.org

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