building material transparency:
managing fluorescent lamps safely and legally

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today’s introduction:

scott cassel

CEO and founder
Product Stewardship Institute

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who is the product stewardship institute?
product categories

- fluorescent lighting
- thermostats
- electronics
- auto switches
- mattresses
- carpet
- phonebooks
- paint
- pharmaceuticals
- medical sharps
- packaging
- batteries
other product categories

- appliances with refrigerants
- gas cylinders
- pesticides
- framework
- textiles
- hhw
- tires
- radioactive devices
some of our partners and advisory council members:
welcome + introductions
Fluorescent lamp recycling project overview

tess zinnes

associate for policy + programs
product stewardship institute

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psi’s roles & goals

- stakeholder education
- promote recycling
- researching solutions

increase the safe & legal management of fluorescent lamps in commercial buildings
please welcome today’s presenters:

christine mathis
environment engineer
burlington board of health
cmathis@burlington.org

dave sherman
director of sales
american lamp recycling
dave@americanlamprecycling.com
mercury management matters
the challenge + a case study

christine mathis
environmental engineer
burlington board of health

cmathis@burlington.org
health risks

drinking water limit
2.0 parts per billion

concentration

bioaccumulation

neurotoxin

*B = 1 part per billion

BURLINGTON BOARD OF HEALTH
mercury management act: 2014 revisions

Certificate of Recycling & Disposal

36 month requirement

Annual Report

Burlington Board of Health
MA mercury management act: bans mercury-containing lamps from landfills & incinerators, as of 2008

facts:
• state law covers all mercury-containing lamps, including "low mercury" lamps with green markings.

• non-compliance is subject to a fine of up to $25,000 per violation per day by the massachusetts department of environmental protection.
Control of Toxic and Hazardous Materials Bylaw (1991)
Purpose is to protect, preserve and maintain the existing and potential groundwater recharge areas within the Town from contamination

Universal Waste Collection events.
The Board of Health sponsors a low-cost recycling event for businesses with larger quantities of universal wastes.

Household Hazardous waste collection events
Two town-wide collection events and mercury containing products are accepted for recycling from Burlington residents at no cost at the Board of Health Office
who needs a permit under the Control of Toxic and Hazardous Materials Bylaw?

Any owner/operator of a commercial or industrial establishment storing toxic or hazardous materials in quantities totaling 220 lbs (approximately 28 gallons) or more must register their inventory with the Board of Health.

Each company is inspected once per year including management of mercury containing waste
Hazardous Building Component Management Plan Policy

Adopted in 1997 and enforceable through the Control of Toxic and Hazardous Materials Bylaw

Requires an applicant/property owner to complete a inventory of all hazardous building components prior to renovation or demolition.

Board or Health approval of a Pre-renovation/Pre-demolition checklist is required prior to issuance of a building permits or as a condition of special permits or site plan approvals

Applicable to all demolitions and to renovations of non-residential buildings

Burlington Board of Health
## PRE-DEMOLITION/PRE-RENOVATION INSPECTION CHECKLIST

<table>
<thead>
<tr>
<th>Hazardous Building Materials</th>
<th>Not Present</th>
<th>Not Impacted</th>
<th>Will Be Removed</th>
<th>Common Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASBESTOS</td>
<td></td>
<td></td>
<td>Pipe, boiler, or tank insulation materials, Suspended ceiling panels, Floor tiles &amp; mastic, Caulking, glazing materials, Roofing and siding materials</td>
<td></td>
</tr>
<tr>
<td>ABANDONED CHEMICALS</td>
<td></td>
<td></td>
<td>Gasoline &amp; Oils, Paints &amp; Thinners, Pesticides, and Herbicides, Cleaning Products</td>
<td></td>
</tr>
<tr>
<td>COOLANT GASES</td>
<td></td>
<td></td>
<td>Air-conditioning &amp; refrigeration systems (ex. Freon) – Proof / receipt of refrigerant recycling is required with submittal.</td>
<td></td>
</tr>
<tr>
<td>BATTERIES</td>
<td></td>
<td></td>
<td>Emergency lighting and large equipment</td>
<td></td>
</tr>
<tr>
<td>STORAGE TANKS</td>
<td></td>
<td></td>
<td>Emergency generators, furnace systems, chemical storage</td>
<td></td>
</tr>
<tr>
<td>HYDRAULIC FLUIDS</td>
<td></td>
<td></td>
<td>Door closers, Hydraulic elevator reservoir tanks and associated piping</td>
<td></td>
</tr>
<tr>
<td>DIELECTRIC FLUIDS</td>
<td></td>
<td></td>
<td>Electrical transformers, Lighting ballasts, Capacitors</td>
<td></td>
</tr>
<tr>
<td>LEAD PAINT</td>
<td></td>
<td></td>
<td>Fluorescent lamps (including green tipped tubes), Thermostats, Switches, Silent Light Switches, Manometers, and Natural Gas Meters, Ballasts</td>
<td></td>
</tr>
<tr>
<td>RADIOACTIVE MATERIALS</td>
<td></td>
<td></td>
<td>Self-illuminative exit signs and emergency lighting, Smoke detectors</td>
<td></td>
</tr>
</tbody>
</table>

**BURLINGTON BOARD OF HEALTH**
demolition of 91,900 ft$^2$ industrial building

Removed the following mercury containing materials:

- 2992 feet of straight fluorescent lamps
- 144 U-tubes and circular lamps
- 42 other lamps (HID, mercury vapor, metal halide and HPS)
American Lamp Recycling
Recycling Mercury for a Green Future
How much *mercury* does it take to contaminate this a 3.3 million gallon reservoir?

...only 20 grams of mercury, which is equivalent to:
Fluorescent Lamp Recycling Process

Waste Fluorescent Lamps

Lamp Machine

Crush & Separate Components

Hg
Powd
Pure Hg

Rare Earth

Phosphor Powder

Metal

Glass

Thermal Retort

Recycle
ALR Owned Facility in NY State

Fully Permitted, State of the Art Lamp Processing Equipment to Recover Mercury
ALR Service Options

1. Full Service Recycling Program
2. Mail Back Recycling Kits
What is a **building owners responsibility**?

- Building Owners are responsible for their Fluorescent Lamps from “**Cradle to Grave**”.

- Building Owners are financially responsible for the Environmental Liability of their Fluorescent Lamps forever.

- A **Certificate of Recycling** as Proof of Proper Disposal is required to Terminate that financial liability.
What should an architect and spec writer include in a project spec?

- Transportation “Chain of Custody” documentation for the Fluorescent Lamps from the project site to the recycling facility.

- A Certificate of Recycling from a permitted fluorescent lamp recycling facility.

- Copy of “SOQ File” or other documentation of permits, insurance and compliance for the lamp recycling facility.
thank you!

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questions?