PCBs in Building Materials
Lessons from the Trenches

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Industrial Hygiene Services Manager
> Health & Safety
> TSCA Overview
> Moving Through the PCB in Building Materials Management Maze
> Lessons learned
Cardno, Australian-based Engineering & Infrastructure firm acquired ATC Associates in 2012

- Established in 1945, Cardno operates over 300 offices worldwide
- Employs 8,000 professionals
- Cardno ranks 26th on ENR’s 2013 top 500 design firms and 30th for top 200 Environmental Firms
- Over 200 offices in U.S., employing over 4,600 professionals

Cardno ATC is part of Cardno Americas Region

- Engineering & Environmental Services
- Natural Resources Management & Health Sciences
- Governmental Services
- Latin America
Cardno ATC PCB in Building Materials Clients

- College/Universities
- MBTA
- DCAM
- Massport
- MassDOT
  - Callahan Vent Building
  - Bridges
  - Depots
- Schools
- CT Dept of Education
- Sturbridge Public Schools
- Private Property Owners
  - Renovation
  - Demolition
  - Transactions
- NYC School Dept.
- GSA
  - JFK (Federal Employee Daycare Center)
Health & Safety Issues

- Asbestos
- Silica
- Lead, Chromium, Cadmium (Coatings)
- Combustion Gasses (CO, NO2, PM, PAH)
- Fall Protection
- Noise
- Weather Conditions
- HAZWOPER?
Health & Safety
Health & Safety Issues
Health and Safety
Health and Safety
Health and Safety
Where’s the cheese?
The PCB Maze

> Client Objectives / Project Scope
  > Identification
  > Delineation
  > Abatement Plan Development
  > Abatement Plan Implementation
  > Confirmatory Sampling
  > Long-Term Monitoring & Maintenance Implementation Plans (MMIP)
The PCB Maze – Client Objective / Project Scope

> Schedule
> Scope
  > Size
  > Demolition / Renovation
> Property Use
  > Short-Term
  > Long-Term
> Regulatory Climate
  > The weather is constantly changing
The PCB Maze - Identification

> Review Client Objective / Project Scope
> PCB Bulk Product Focus
> Suspect Building Review
> Significant number of samples
> Iterative (focused) process
> Field Observations
The PCB Maze - Identification

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Sample Type (e.g., gluing, etc.)</th>
<th>Location (e.g., number, floor, between materials, etc.)</th>
<th>Quantity (e.g., feet)</th>
<th>Color</th>
<th>Texture (e.g., soft, rough, etc.)</th>
<th>Hardness (e.g., hard, soft, etc.)</th>
<th>Tackiness (e.g., sticky, non-sticky, etc.)</th>
<th>Elasticity (e.g., flexible, rigid, etc.)</th>
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General notes:

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Non-Detect may not = NO PCBs
  > Aroclors
  > Congeners
  > Homologs

Need to consider data use:
  > Identification
  > Risk assessment
  > Disposal
  > Confirmation
The PCB Maze - Delineation

> Review Client Objective / Project Scope
  > PCB Bulk Product Waste, PCB Remediation Waste, Excluded PCB Product
  > Confirm initial findings

Lefkowitz, D, www.pcbinschools.org
The PCB Maze – Abatement Plan Development

> Review Client Objective / Project Scope
> Communication With Building Users
> PCB Bulk Product Waste
  > If isolated can dispose without EPA involvement
  > Limited waste management facilities
  > Often impacts adjacent materials
Abatement options can be combined

> Various approaches for
  > Pre-abatement characterization
  > Waste disposal

1. **Self Implementing – 40 CFR § 761.61(a)**
  > Requires EPA Approved Workplan
  > “Streamlined” process
  > Generally full removal
  > Often requires the
  > most data
2. Performance-Based Disposal - 40 CFR § 761.61(b)
   > Manage all suspect materials as PCB Bulk Product Waste
   > Typically easy to implement and most costly approach

3. Risk Based - 40 CFR § 761.61(c)
   > Requires EPA Approved Workplan
   > Can be lengthy approval process

3.5? Interim Measures/Pilot Programs
PCB Excluded Product

- Can be managed at any facility that can accept
- MA landfill limit is 2 ppm

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**PCBs will be removed from complex by fall, UMass Amherst says**

By Sydney Lupkin, Globe Correspondent | July 8, 2010

The University of Massachusetts Amherst has less than two months to remove toxic PCBs from one of its residence complexes, but officials said they are confident the work will be complete before students return.

They don’t have a choice.
The PCB Maze – Abatement Plan Implementation

> Oversight
  > Asbestos / Lead Abatement model

> Caulk Removal
  > Lead abatement model
    – Readily accessible focus
    – Minimize dust generation

> Impacted Surfaces
  > Removal
  > Encapsulate

> Disposal
  > Bulk Product Waste
  > Remediation Waste
The PCB Maze – Confirmatory Sampling

> Review Client Objective / Project Scope
  > Focus on Abatement Oversight / Visual
  > Effort commensurate with regulatory and abatement approach selected
The PCB Maze – Project Closeout

- Deed Notice
- Long-Term Maintenance and Inspection Plan
- Closure Report
  - Missing paperwork
Lessons Learned

> Fully integrate Client objective and building use into scope of work
> Understand how data will be used
> Bring abatement contractor into process as early as possible
> Utilize construction material testing skills
> Stay current
Lesson Learn – Sample at Correct Time

> Agassiz Elementary School, Jamaica Plain, MA
> Weatherization project / Active staff and community group
> Called in after windows ordered due to contractor questions
> PCBs Bulk Product Waste Found
> Managed all materials as PCB Bulk Product Waste under 40 CFR 761.62(b) due to Client Objectives & Schedule
> Project completed on schedule
Lesson Learned – How Much Study is Enough?

- Hanger Demolition
- Completed PCB, ACM and LBP survey – all found
- Completed numerous iterative rounds of testing and pilot tests
Cardno ATC – Assume the Worst

- MassDOT Callahan Tunnel Vent Building
- Façade Replacement
- ACM vs. PCBs as project driver
- Community Concerns
  - Parking
  - Playground
  - Bench
Cardno ATC PCB in Building Material Clients

- Boston office property
- Risk Based
- Abatement
- Encapsulation
Points of Contact

EPA Website:  [www.epa.gov/pcbsincaulk](http://www.epa.gov/pcbsincaulk)
EPA PCB in Caulk Hotline: 888-835-5372

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