American Can Building

4101 Spring Grove Avenue
Cincinnati, Hamilton County, Ohio

American Can Building, LLC
Port of Greater Cincinnati Development Authority
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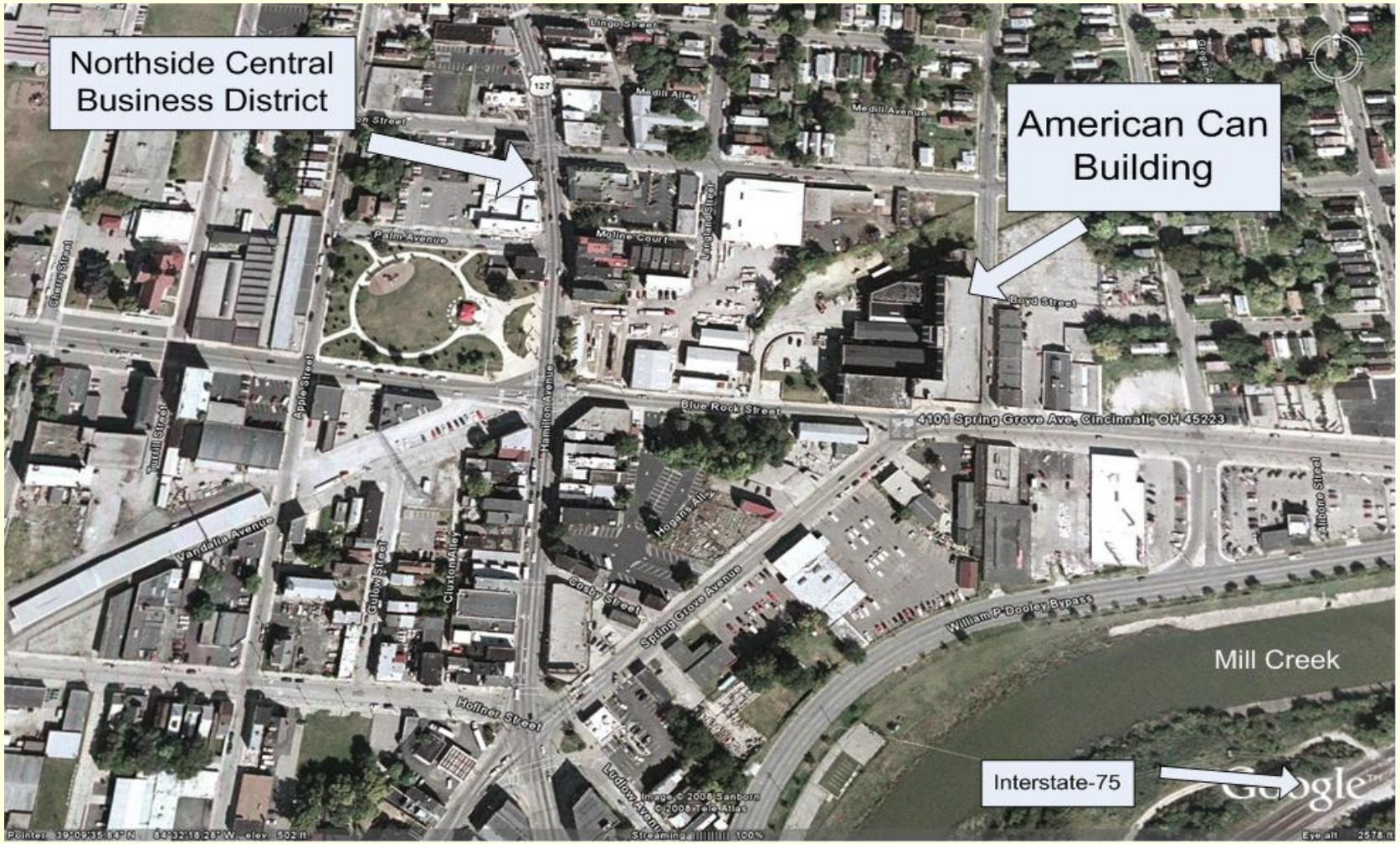
Location in Northside Neighborhood



A Classic Brownfield Site

- Under-used industrial property…
  - 1920’s era vacant factory building
  - A local nuisance and I-75 gateway eyesore
- where redevelopment of the property into…
  - 93 market rate apartments
  - 30,000 sf commercial space
- was complicated by presence of…
  - low levels of PCBs

Exterior Prior to Renovation

Exterior After Renovation

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History of the Building

American Can Company

- Created by mergers in 1901
  - > 50 factories
  - > 90% of US production
  - dubbed the “Tin Can Trust”

- Containers for everything you can imagine…
  - veggies, meat, beer, crackers, spices, lard, shoe polish, coffee, tea, talcum, tooth powder
- Cincinnati Machine Shop built in 1921
  - machines, patterns and parts for other plants

Cincinnati Machine Shop

- Services Building
  - admin, engineering, drafting, cafeteria
  - blue print, photo, records storage vaults
- High Bay Areas
  - casting and heat treating of molds
  - final assembly and shipping of machines
- Manufacturing Building
  - 1st floor - machining of castings/molds
  - 2nd – 5th floors – pattern/equipment assembly

High Bay Areas

History of Operations

- 1921- 1963
  - American Can Company
- 1965 – 1978
  - Cleveland Machine, JL Lenz & Assoc.
  - machining operations on first floor
- 1978 – 2003
  - small users, primarily first floor
  - machining, storage, artists, t-shirt printing
  - significantly underutilized

Environmental Issues

- Routine environmental issues
  - soil impacts (arsenic background)
  - ground water assessment
  - underground storage tank
  - asbestos-containing materials
- **Plus** low level PCBs in manufacturing floors
  - 4” wood block flooring
  - 9” concrete floors below wood block

Wood Block Flooring - Manufacturing Wing

Concrete Subfloors – under wood block flooring

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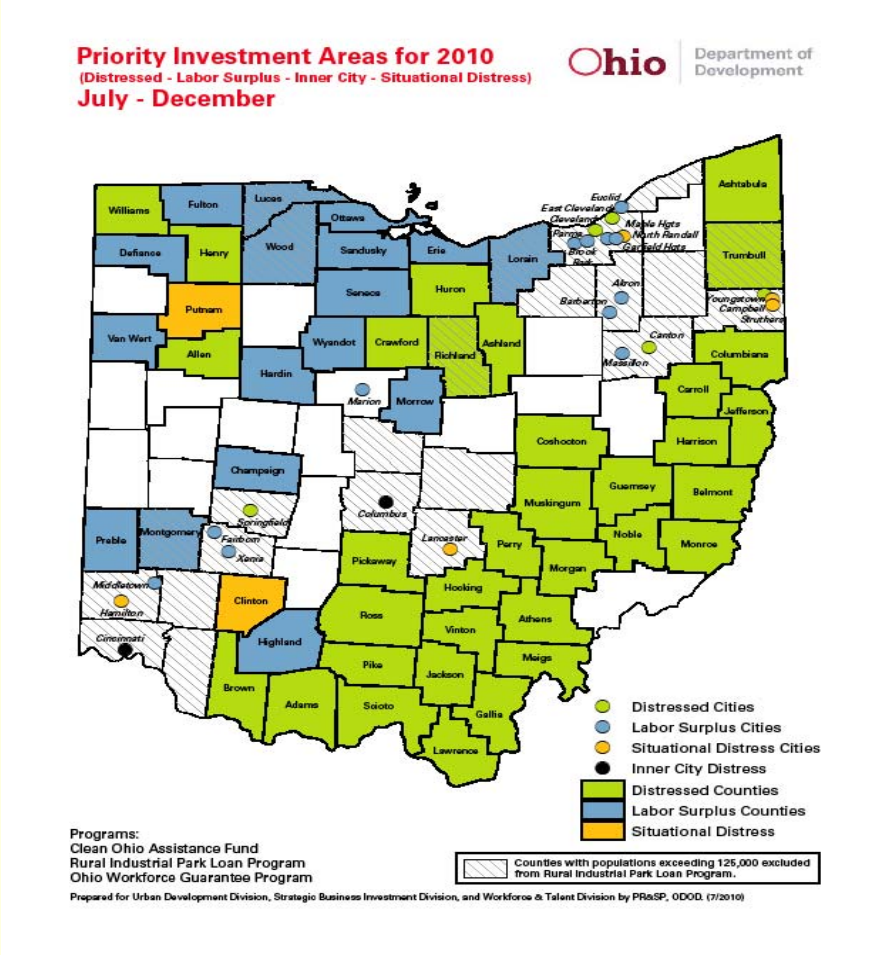
Resources for Redevelopment

Clean Ohio Assistance Fund (COAF)

- Rolling application window
- All Priority Investment Areas eligible
- Must be located in a Priority Investment Area

Priority Investment Area Map



COAF Can Pay For…

- Brownfield property
  - Assessment
  - Cleanup
  - Demolition
- American Can received a $750,000 COAF Cleanup Grant

Additional Resources

- Technical Support
  - Ohio EPA Technical Assistance
  - access to ASTSWMO through Ohio EPA
  - meeting with USEPA Region 5 - TSCA
- Financial Support
  - loans: City of Cincinnati, ARRA stimulus, ODOD revolving loan, federal HUD loan
  - historic preservation tax credits

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Vice-President Biden kicks off exterior renovation

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The Challenge: Safe and Green

Building Demolition

In 2003, USA generated more than 160 million tons of building related construction and demolition materials[1]:

- **~53% result of demolition activities**
- **~38% result of renovation activities**
- **~ 9% result of construction**

[1] ***equates to > 1,000 lbs/year for every man, woman and child in the U.S.***

Safe & Green – Plan Up Front

Safe: Protect Human Health

- eliminate potential exposure to PCBs
- minimize transportation accident risks

Green: Minimize Environmental Impacts

- less disposal space consumed
- reduced air emissions from trucks/equipment
- surface and GW protection
- reuse of building materials

Survey of Brownfield Experiences

- ASTSWMO members polled
  - no clear success stories
  - general agreement that TSCA is a poor fit
- USEPA perspective
  - recognition of limitations of TSCA as applied to brownfield sites
  - willingness to work with state programs, within limits of requirements of TSCA rules

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The Sticky Wicket: Risk Management of PCBs

Coordination Between Ohio VAP and Federal Rules for PCB Cleanups

- Ohio Voluntary Action Program (VAP)
  - If PCBs are identified at a property, the property may be subject to cleanup levels or other provisions of TSCA
  - PCBs are addressed within VAP as hazardous substances and must meet generic numerical standards or property-specific standards in media
- Federal PCB rules address disposal and cleanup standards for TSCA regulated PCBs

Path to Address PCBs

1. TSCA Self-Implementing Procedure
   - wood block floors for off-site disposal
   - attempted clean-up of concrete floors (fail)
2. TSCA Risk-Based Disposal Approval
   - coordinate with Ohio EPA
   - proposal for USEPA Region 5 (redirect)
3. Determination of Pre-1978 Release
   - manage waste in accordance w/ TSCA
   - manage property under Ohio VAP

TSCA Self-Implementing Procedure … porous surface cleanup standards

- High occupancy areas (> 6.7 hrs per week)
  - < 1 ppm with no further restrictions, or
  - between 1 and 10 ppm, provided
    - 10 inch soil cap or 6 inch concrete/asphalt cap, or
    - two coats of contrasting solvent resist sealant, and
    - for either of above, PCB M_L mark
- Low occupancy areas (< 6.7 hrs per week)
  - < 25 ppm, or
  - between 25 and 100 ppm, provided
    - capped, fenced and with PCB M_L mark
- Deed restriction for all options > 1 ppm

TSCA Self-Implementing Procedure … sampling requirements

- Proscriptive Grid Sampling Approach
  - 3 meter grid for characterization
  - 1.5 meter grid for verification
  - Allowances for composite sampling, but…
- Cost Prohibitive for Large Areas
  - 100,000 sf = 1,235 characterization samples
  - 100,000 sf = 4,940 verification samples
  - @ $84 per sample = $518,700 for just analysis

TSCA Self-Implementing Procedure … porous surface remediation

- 40 CFR 761.79(b) or 40 CFR 761.30(p)
- Chemical cleaning
  - surfactant cleaning (*tried, not effective*)
- Scarification
  - bead blasting (*tried, not effective*)
- Double rinse, followed by
  - 2 coats contrasting, solvent resist sealant, or
  - barrier to prevent contact with surface, and
  - PCB M_L mark, but...
  - requires continued current use (*can't use it*)

TSCA Self-Implementing Procedure … may be less practical

40 CFR 761.61(a) begins with the following disclaimer:

EPA designed the self-implementing procedure for a general, moderately-sized site where there should be low residual environmental impact from remedial activities. ***The procedure may be less practical for larger or environmentally diverse sites.***[1] For these other sites, the self-implementing procedure still applies, but an EPA Regional Administrator may authorize more practical procedures through paragraph (c) of this section.

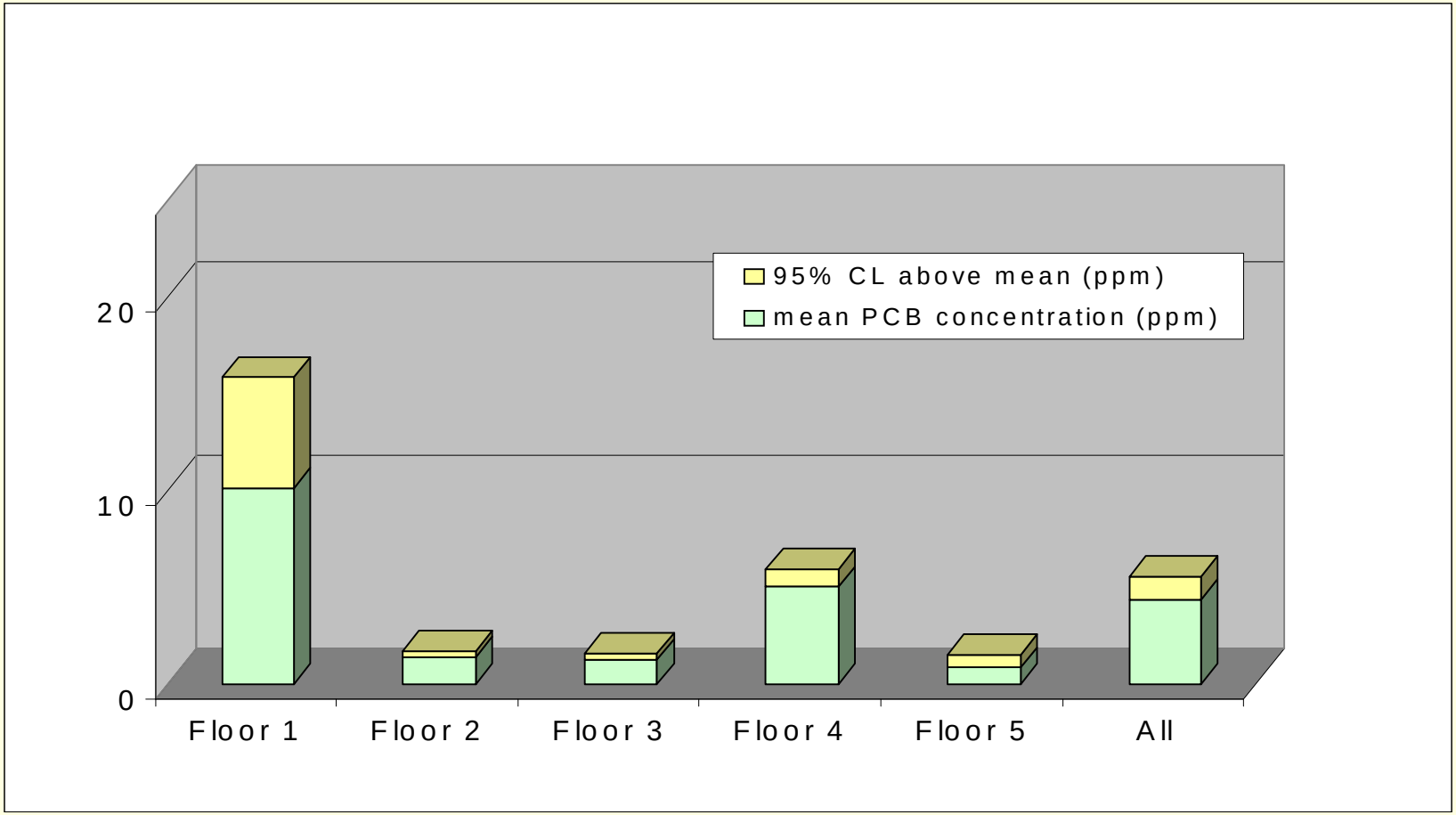
[1] *emphasis* ***should*** *be added in original*

TSCA Risk-Based Disposal Approval

- USEPA can approve an application to:
  - sample, cleanup, or dispose,
  - PCB remediation waste,
  - other than prescribed in 40 CFR 761.61(a)
- Each application must include:
  - nature of contamination
  - sampling procedures, dates, locations
  - location and extent of contamination
  - cleanup plan for the site
  - certification re: data collection and retention

TSCA Risk-Based Disposal Approval … concrete subfloors

Mean Concentration (ppm) and 95% Confidence Limit



TSCA Risk-Based Disposal Approval … proposal for American Can Building

- Statistically-based sampling plan
  - demonstrate floors have PCBs <10 ppm
- Mitigate consistent with TSCA rules
  - 2 coats contrasting, solvent resist sealant
  - barrier to protect sealant – 3 to 4” concrete
- Risk assessment to document protectiveness
- Implement procedures to maintain remedy
  - inspection, maintenance and repair of floors

TSCA Risk-Based Disposal Approval … coordinating with USEPA

- Met with USEPA Region 5 in Chicago:
  - reviewed project scope and status
  - benefits of RBDA procedure
  - support for approach by Ohio EPA
  - commitment by developer to approach
- Based on meeting and follow-up:
  - support for spills being pre-1978
  - handle any newly generated PCB remediation waste under TSCA
  - but handle pre-1978 spills under Ohio VAP

Proceeding under Ohio VAP … applicability

- VAP standards apply to environmental media:
  - soil, sediment, surface water, and ground water; and
  - naturally occurring transitional zones between soil, sediment, surface water or ground water, such as bedrock, soil gas, and air
- Concrete in a building structure is not media
- VAP statute doesn’t authorize CNS for residual PCBs in building components

Proceeding under Ohio VAP … applicability

- Ohio EPA has a duty under the VAP statute to deny a CNS if the remedy identified in an NFA letter is not protective of human health and safety and the environment. ORC 3746.12(C)(2)
- If the NFA letter addresses PCB impacts in (non-media) building materials as part of the overall remedy, the Ohio EPA may deny the CNS if it determines that the remedy is not protective

Proceeding under Ohio VAP … demonstrating protectiveness

- Remedy for PCBs in concrete identified as part of the overall remedy in the NFA letter to allow all environmental work to be integrated and documented in one place
- PCB remedy implemented consistent with the proposed RBDA approach:
  - sample - statistically-based approach
  - evaluate - using risk assessment
  - mitigate - consistent with TSCA
  - maintain - building maintenance plan

Final Remedy for Concrete Floors

- Risk Assessment
  - conservative modeling, plus
  - indoor air testing pre-remedy
- Pathway Elimination
  - Two coats of contrasting, solvent resistant epoxy paint on floors and ceilings
  - 3-4” over-pour of concrete to provide protective barrier over sealant
- Building Maintenance Plan
  - inspection, maintenance and repair

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BONUS: A Green/Sustainable Re-Use

Sustain(able) Cleanup-BENEFITS