

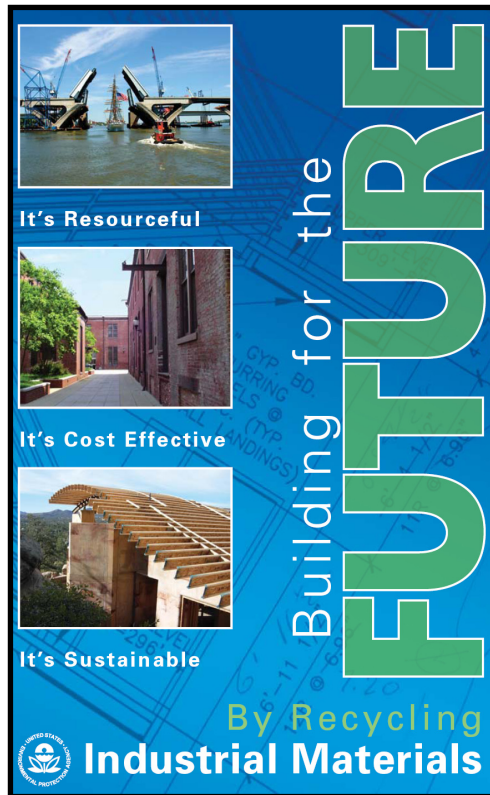
Construction and Demolition (C&D) Materials Recovery

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*C&D Recycling Workshop
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What is U.S. EPA's C&D Materials Recovery Program?

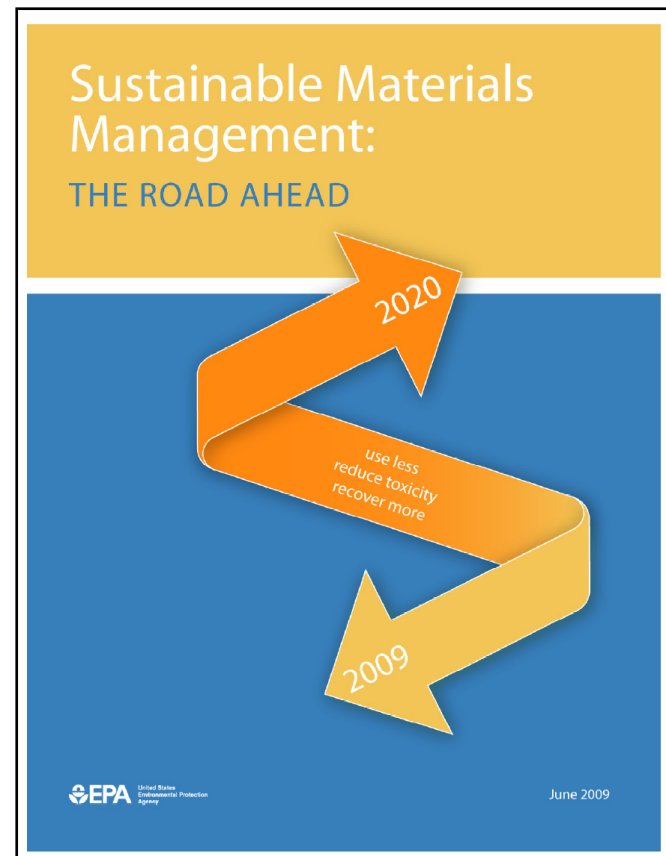


- Encourages the environmentally protective reduction, reuse, and recycling of C&D materials
- Various activities & initiatives
 - Green Buildings
 - Green Products
 - *Roadmap to Increased C&D Materials Recovery*
 - Technical assistance

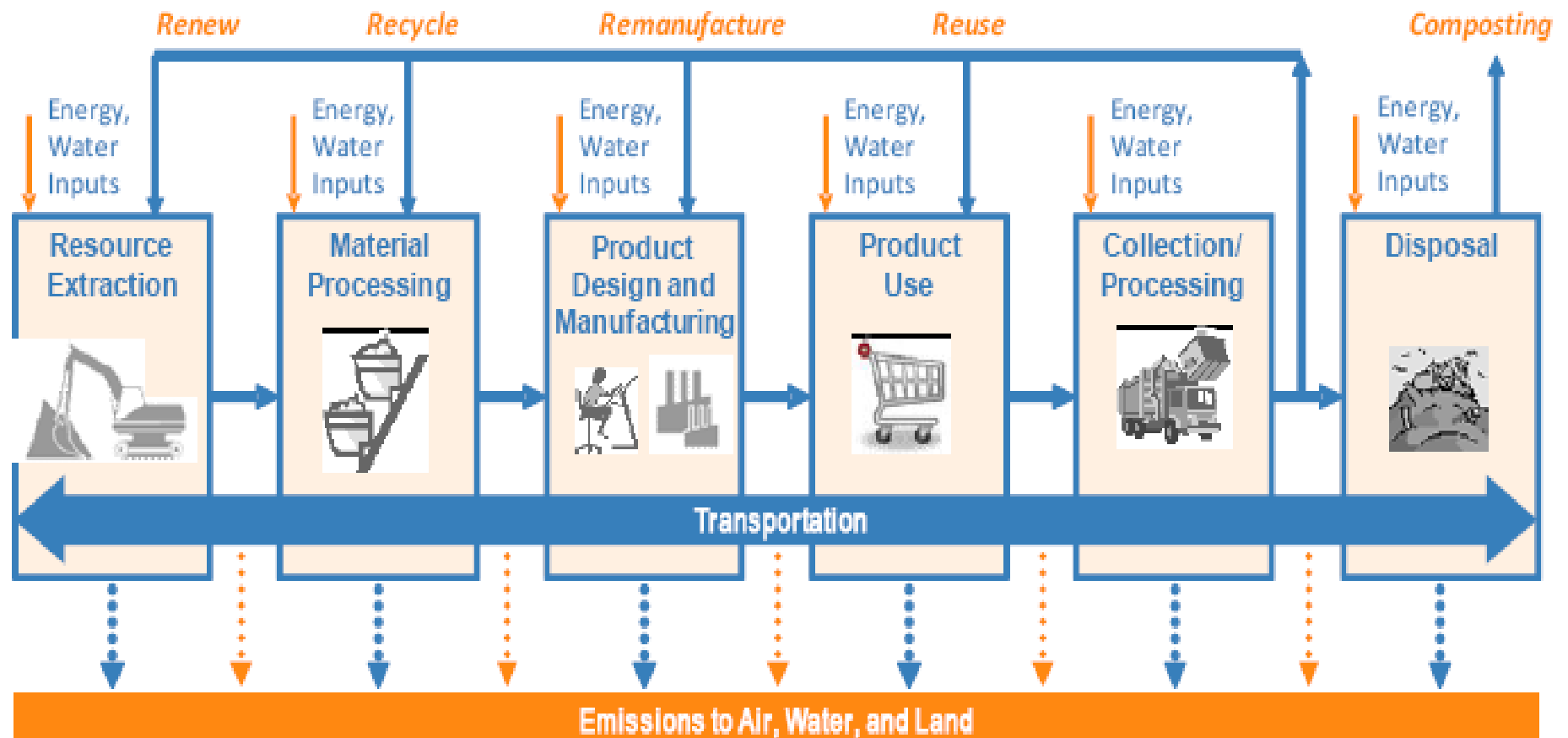
www.epa.gov/cdmaterials

Sustainable Materials Management

EPA is shifting focus from waste management to *sustainable materials management* (SMM) by taking a lifecycle approach to managing materials

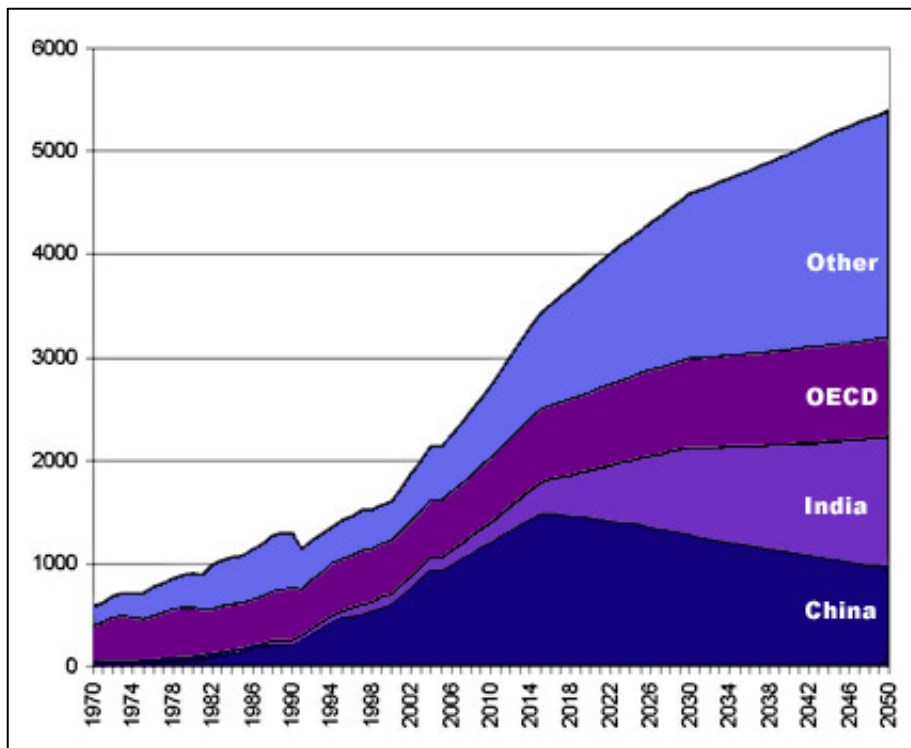


What is a “lifecycle” approach?



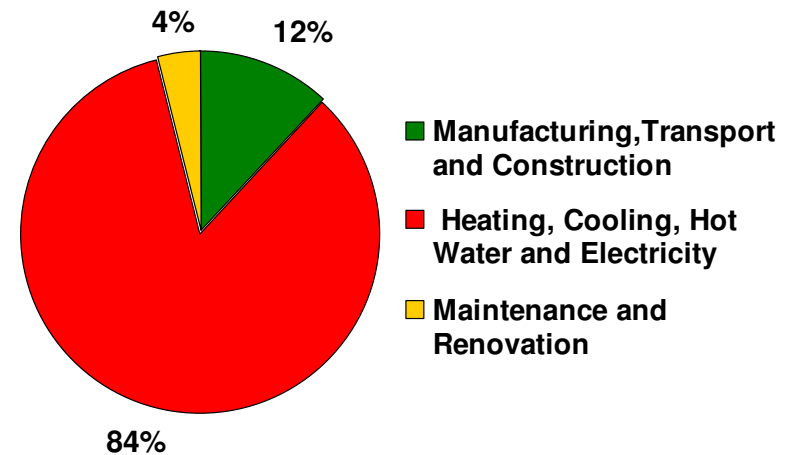
Rationale - Materials

**Global Cement Demand by Region and Country
(1970-2050)**

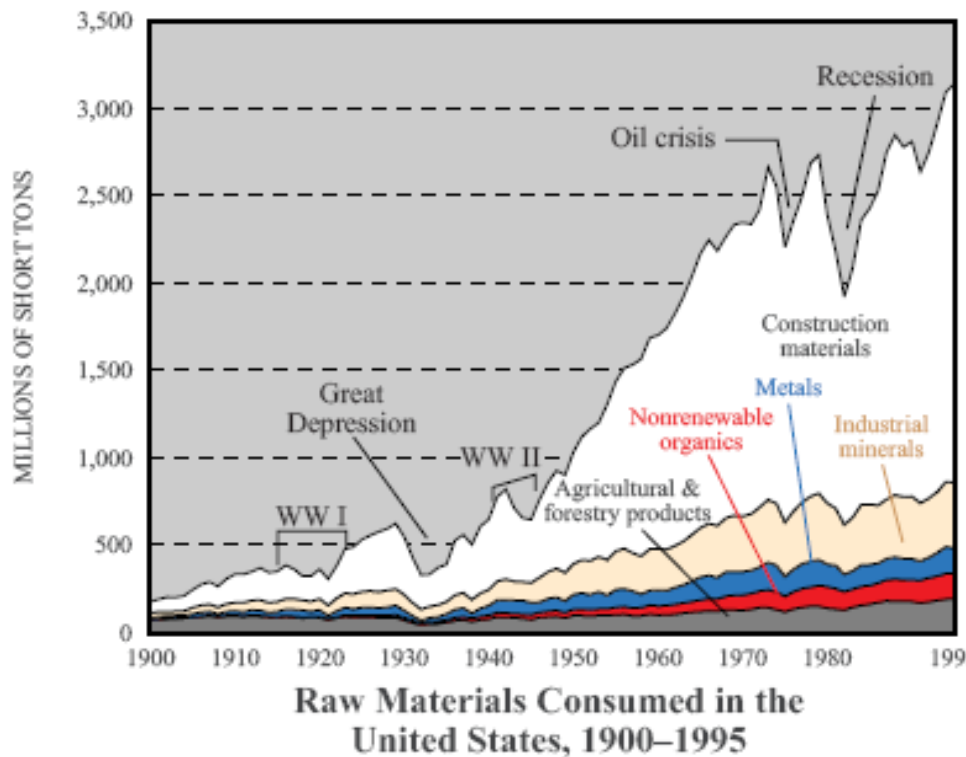


Source: USGS and IEA

Building Life Cycle Energy Use

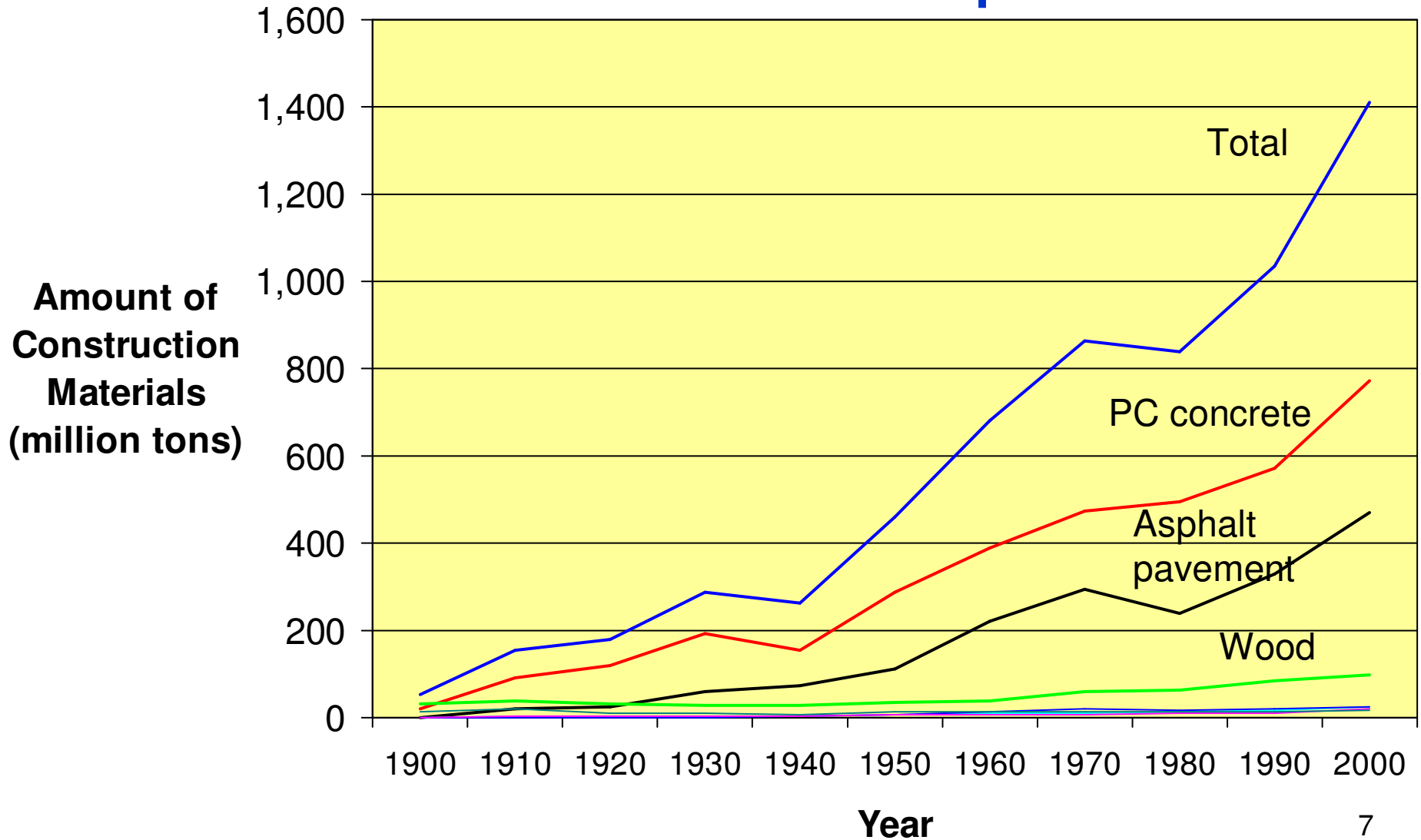


- 34 million new homes projected 2005-2030
- 48% increase in commercial building floor space projected (from 73 to 108 billion sq. ft.)



- Construction materials represent approximately 60% the U.S. materials flow.
- U.S. discarded approximately 170 million tons of building-related construction and demolition (C&D) materials in 2003
- Approximately 48% was diverted from the landfill.

US Construction Material Consumption



Source: Cochran and Townsend, 2010

How do recycled materials support sustainability in public works?

- Economic Savings
 - Reduced costs associated with disposal
 - Recycled materials can be less expensive than traditional materials
 - Cost savings from longer life pavements & structures (less frequent repair/rehabilitation)
- Performance Benefits
 - When used according to sound engineering specs, perform as well as or better than traditional materials



Deconstruction vs. Demolition



Photo Credit: Universal Wrecking

The line between the two becomes blurry for commercial buildings.

← Reuse

Utilizing a used product or material in a manner that generally retains its original form and identity with minor refurbishments. Examples include fixtures, lumber, and doors that are refinished for use.



Recycling →

Processing a used material, generally through size reduction, to make it usable as an ingredient in a new product. Sorting may be a necessary step for recycling if materials are delivered to a recycler in a mixed load.



Recycling Facility







Reuse Store





Common Recycling Opportunities



Close the Loop on Site

- Reuse brick, old wood, and architectural features on site
- Recycle concrete as road base on site
- Make mulch out of clean wood
- Buy recycled-content materials



Recycled-Content Materials

- Building materials that can have recycled content from C&D sources:
 - Metal
 - Particleboard
 - Drywall
 - Asphalt shingles
- Look for recycled-content information from the manufacturer.
- New green product labels and certifications will help identify preferable products.



Difficult Materials to Reuse or Recycle

- Drywall
- Asphalt shingles
- Insulation
- Plastics



Do not reuse/recycle

- Asbestos-containing materials
- Materials coated with lead-based paint
- Treated wood

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