

Solid Waste



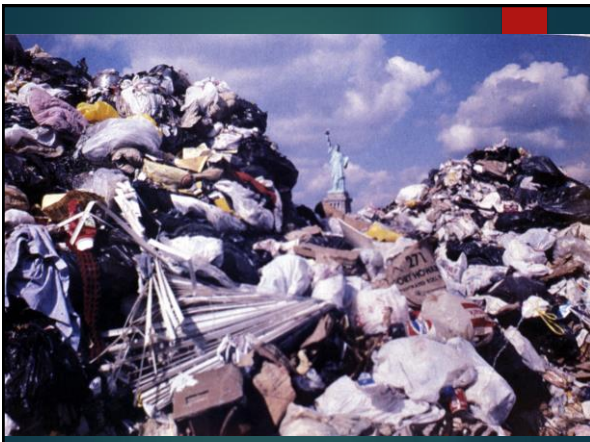
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ENQ Special Edition: The ARCC Journal of Architectural Research Architecture, Waste and the Circular Economy

Waste is a global crisis. The world is drowning in waste. A linear economy model fueled by vast quantities of single-use consumption is unsustainable. The average American citizen consumes nearly 32 times more than the average Indian citizen. Companies, businesses, and corporates are depleting the planet's natural resources at an astonishing rate. The design and construction sector alone are responsible for 30-40% of total solid waste worldwide, yet as architects, designers, and planners, the waste problem is almost absent from current discourse, both in practice and in academia. What is the role of the architect and architectural education in the waste problem? How can design thinking reshape and redirect the waste crisis?



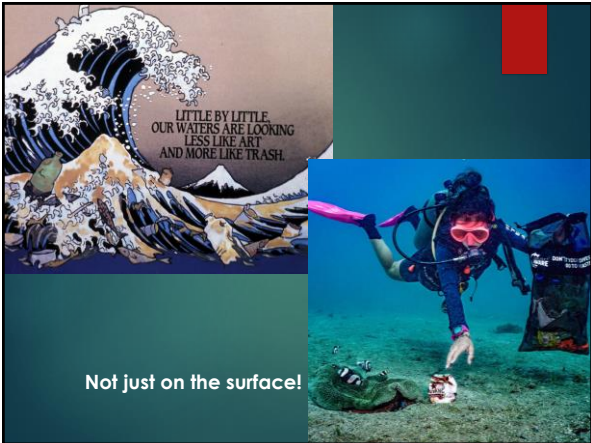
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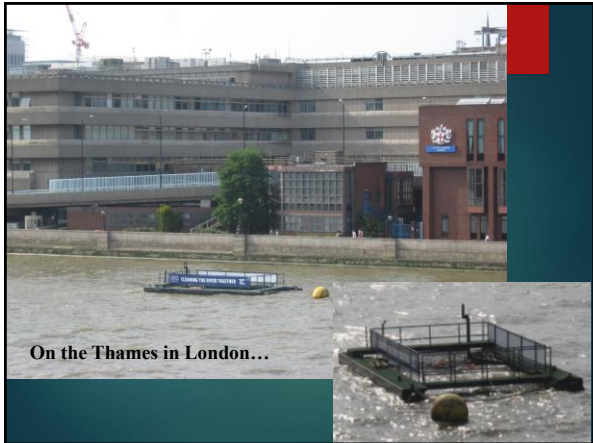
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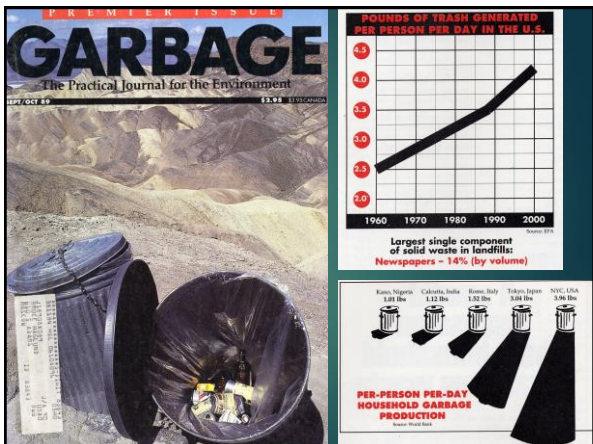
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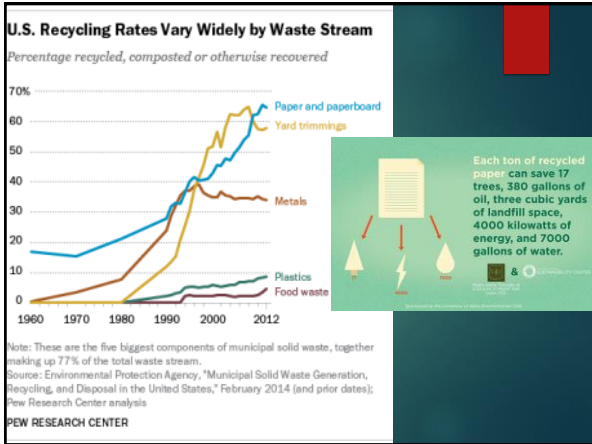
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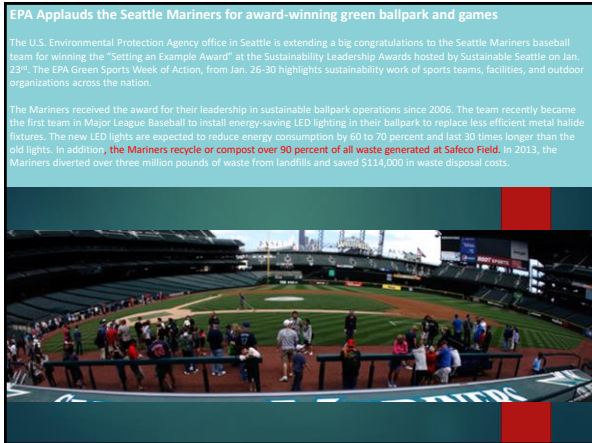
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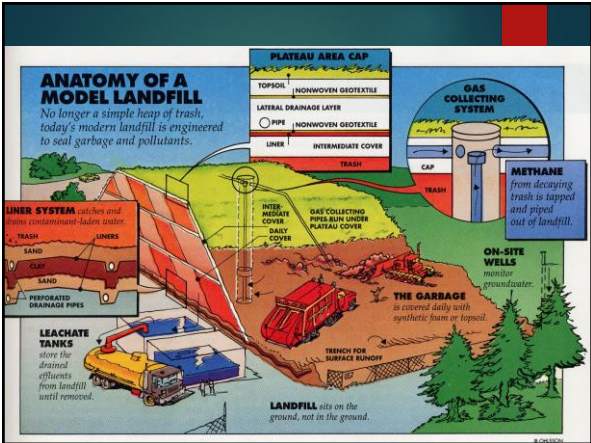


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..are landfills the solution?...

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Wasted Wood
 Each year, the United States sends more wood to the landfill than it harvests from the national forest system.

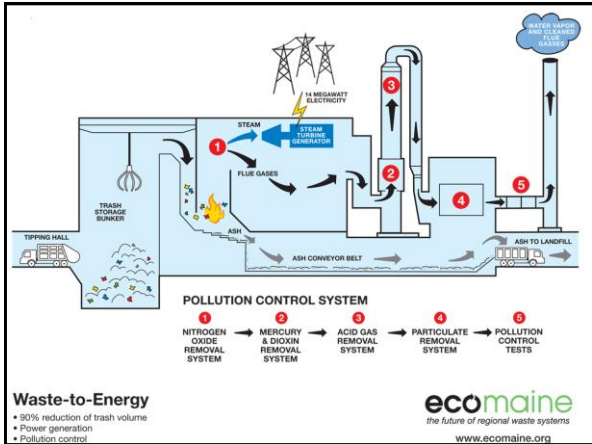
11.1 million tons
Wood Sent to Landfills

8.3 million tons
Wood Harvested from

...or it could go here>

304 10th Street
Port Townsend

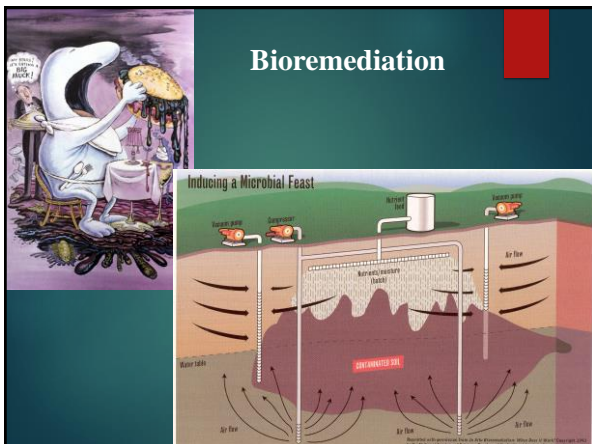
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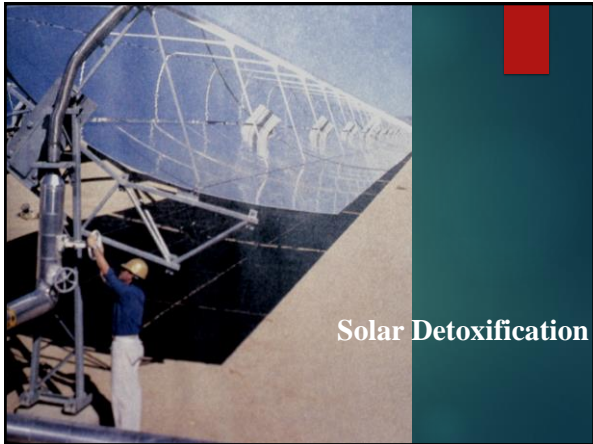
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Solar Detoxification

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Solutions:

- Reduce
- Reuse
- Recycle



Pre-cycle:

- Recyclable packaging
- Minimal packaging
- Recycled products

PUT A LITTLE MORE IN YOUR POCKET... AND A LITTLE LESS IN YOUR GARBAGE.

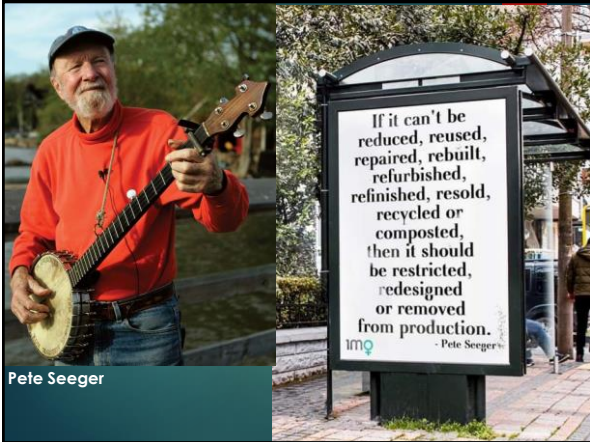
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A plan for New York

WASTE MANAGEMENT PLAN

- Plan for tenant disposal and separation**
 - Waste stream types and quantities
 - Location of waste stations
 - Types of bins
 - Signage
- Plan for movement of recyclables and waste to central storage**
 - Responsibility
 - Frequency
 - Transport containers
 - Route
- Plan for waste storage**
 - Calculate area required
 - Volume reduction equipment
 - Location
 - Layout of storage space
 - Accessibility
 - Time restrictions
- Plan for collection**
 - Pallet size
 - Designated area, size and location
 - If not used containers:
 - Designated area, size and location
 - Staffing to return containers
 - Area for wash containers
 - If compacted containers:
 - Collection vehicle access
 - Ceiling height

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Pete Seeger

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Urban Ore, in Berkeley, California, offers a treasure trove of materials retrieved from the trash bin.

Manage construction sites
Reuse building materials

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Construction, Demolition & Landclearing

- Acoustic Ceiling Tile
- Brick
- Concrete & Asphalt
- Dirt & Soil
- Drywall
- Landclearing & Yardwaste
- Reusable & Salvaged Building Materials
- Mixed CDL
- Porcelain
- Rock
- Roofing
- Wood



Drywall waste block

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For example:

ceiling tile recycling saves

- 75 million gallons of water
- 881,000 lbs of virgin material
- 55 million kWh of energy

The Armstrong Ceiling Recycling Program is an easy way for you to help save the environment. In 10 years, the nation's first, largest and most cutting recycling program has recycled 85 million lbs. of old ceiling - diverting over 40,000 tons from the landfill. It's a part of the solution. Be recycling today the right way in your next application!

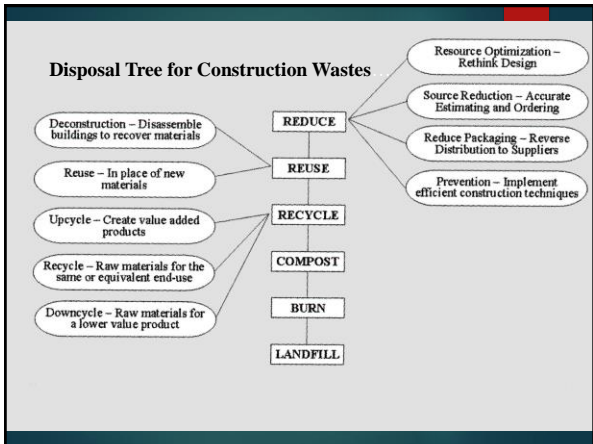
ARMSTRONG CEILING RECYCLING
1.877.ARMSTRONG

Armstrong
2015

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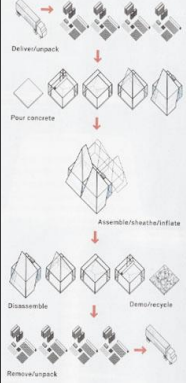
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Design for Disassembly Connectors

No	Yes	No	Yes
  <p>Nails damage the material.</p>	  <p>Use screws, pins, nut and bolts.</p>	  <p>Avoid glue and sealants.</p>	  <p>Use easy dissolvable binders.</p>
  <p>Fasteners can be found in all shapes and size.</p>	  <p>Use common and similar fasteners.</p>	  <p>Portland cement is impossible disassemble.</p>	  <p>Use lime mortar instead.</p>

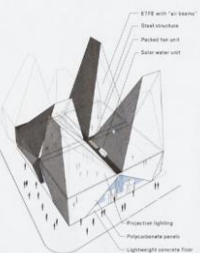
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Icebergs for Manhattan





Designed for modular assembly and disassembly

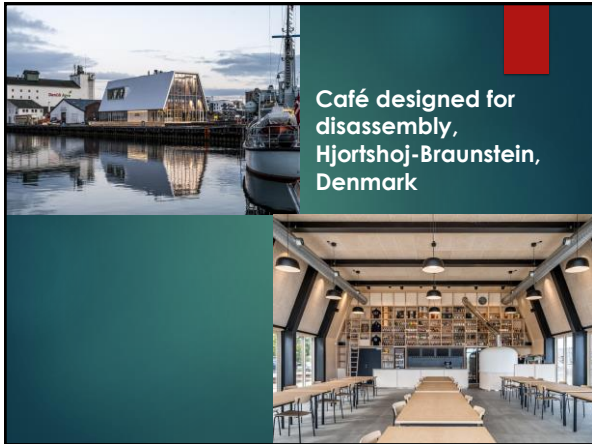


A map details the roughly 100 stalled construction sites in Manhattan. Designed for easy assembly and rapid disassembly, Icebergs could serve a variety of social and cultural functions.

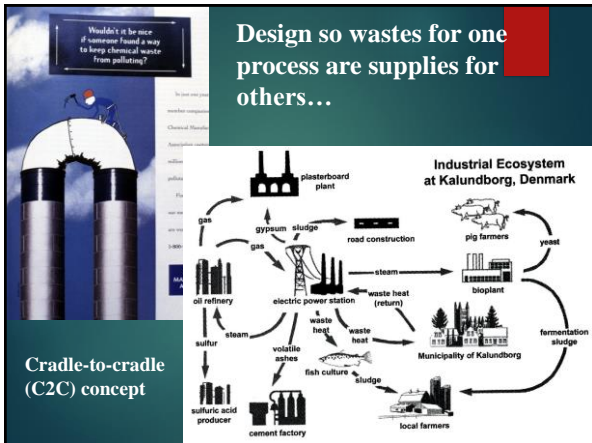
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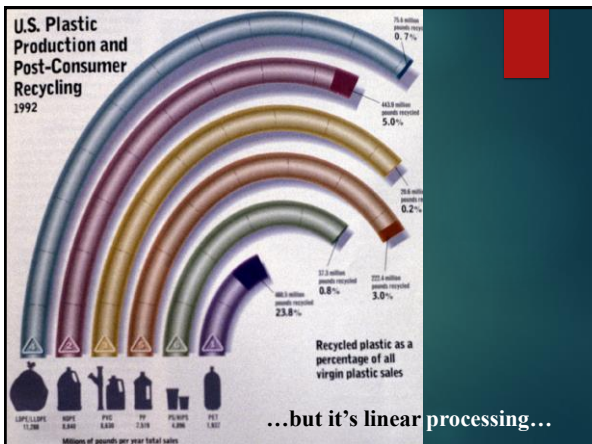
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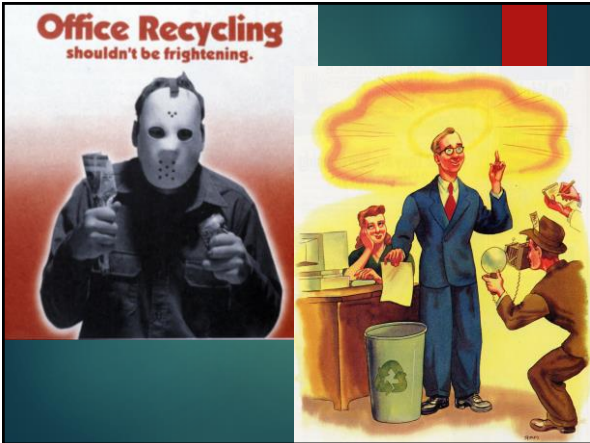
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AUDUBON HOUSE
Building the Environmentally Responsible, Energy-Efficient Office
National Audubon Society
Croton Collaborative, Architects

total recycled: 79%

Category	Percentage
total recycled	79%
paper (newspapers, white office paper, mixed paper)	64.5%
4% glass bottles & metal cans	4%
3% compost	3%
2% reusable furniture for thrift shops	2%
3% corrugated cardboard	3%
1% plastics	1%
2% office hazardous waste	2%
non-recyclables	21%

Office waste to be recycled at Audubon House. An analysis of office waste at Audubon undertaken in 1991 confirmed that close to 80 percent of it could be recycled. That is the target set for Audubon's ambitious in-house recycling program.

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Architectural drawings showing floor plans and elevations of Audubon House. The drawings are labeled with floor numbers: 8 Audubon, 7 Audubon, 6 Audubon, 5 Audubon, 4 Audubon, 3 Thurst, 2 Thurst, 1 Composite of various, and 00 Street, whole city.

Photograph of an office interior showing a recycling station with various bins and a table.

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"WHAT WOULD HAPPEN IF ALL THE CAPITAL COSTS FOR AN INCINERATOR WERE SPENT ON RECYCLING?" POLS ASKED.

Goal: 60% recycling (EU average)

<http://www.ci.seattle.wa.us/util/services/recyclingtour/default.htm>

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Curbside pickup of recyclables went citywide in 1988. Households save money by cutting waste and recycling.

...make it easy...

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Even so...Seattle North Transfer Station
Mahlum Architects

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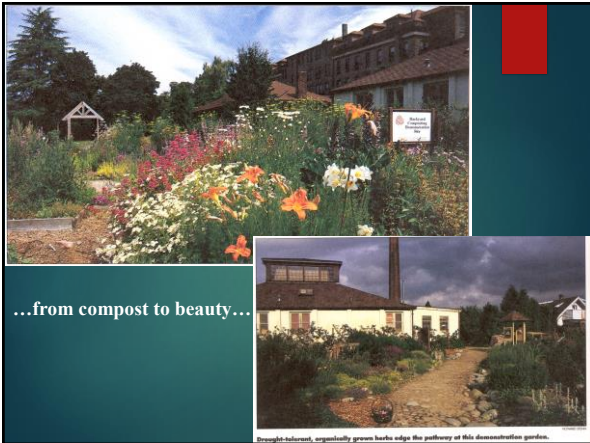
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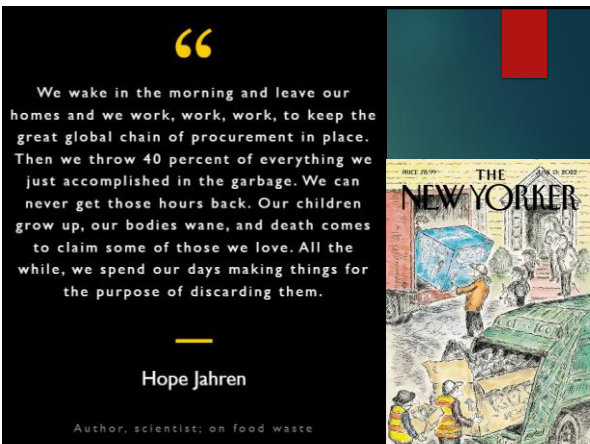
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