

Advancements in C&D Sorting Technology

Rich Golf, *Managing Partner*
Lakeshore Recycling Systems

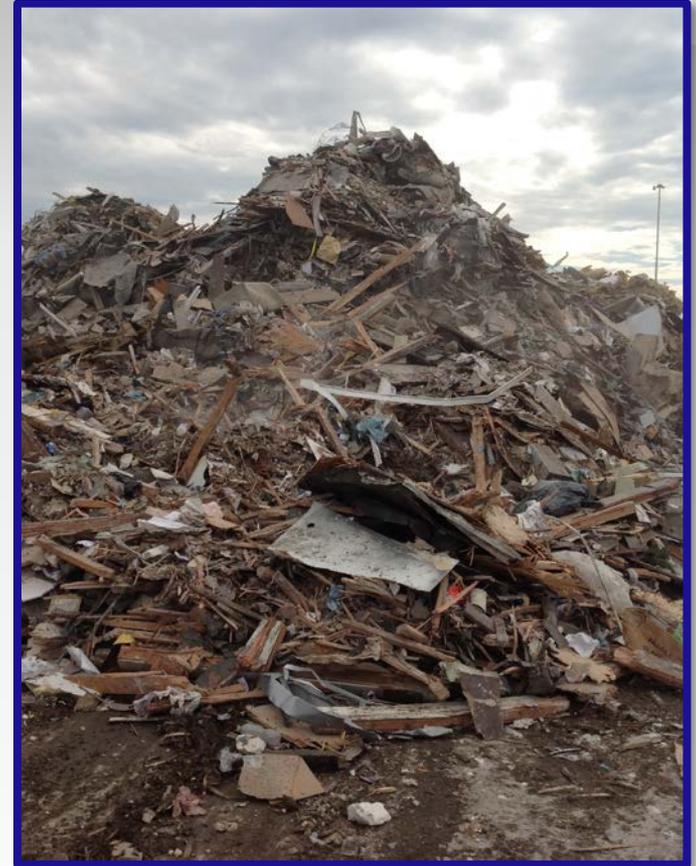
Innovative Changes

- Innovations of 20+ years
 - Experienced different types of systems in use
 - From the first systems to today's technology, some of the same pieces are still in use
 - Simple efficiency and low maintenance remain
 - Latest advancements have not worked out all issues when encountering changing stream of materials
 - Robotics
 - Optical Wood Sorters



C&D Materials

- Construction and demolition materials are constantly changing streams
 - Machines and facilities must adapt to accommodate commodities
 - High volumes of commodities include...



Wood



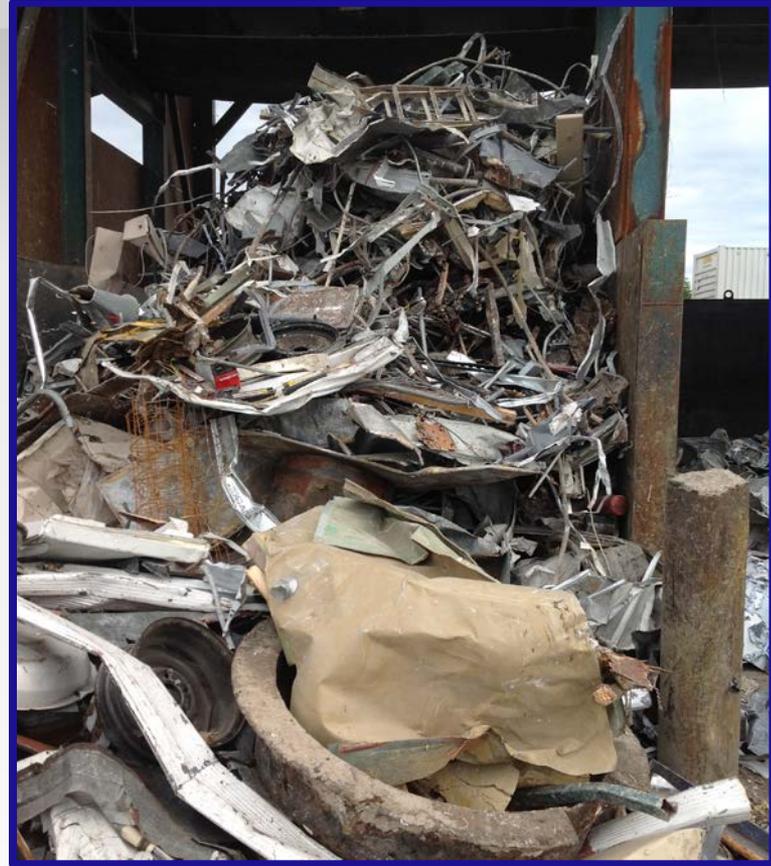
Heavies

- Brick, Cinder Block, Concrete, Marble, Asphalt



Cardboard, Metal

- Ferrous/
Non-ferrous



Fines

- ADC or Road Base

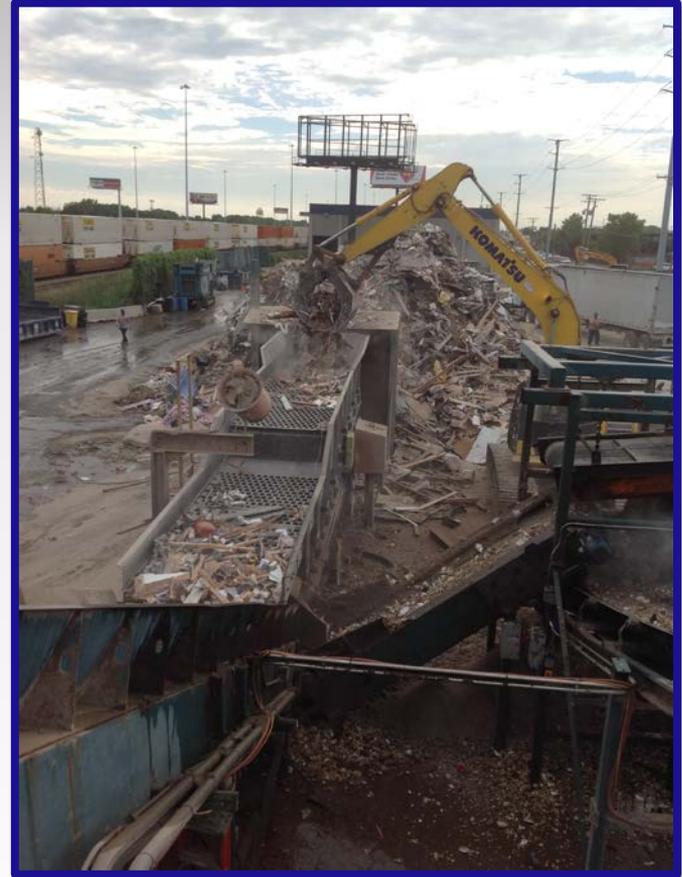


Roofing Shingles



Other Commodities

- Aluminum cans, mixed paper
- Rigid plastics
 - HDPE, Milk Crates, Pop Crates, 5-gallon Buckets
- Batteries, Motors
- Electronic Waste (E-waste)



Define Inbound Material Stream

- Material may vary depending on your location
 - Clay roof tiles vs. shingles
 - Cinderblock vs. brick
 - Chicago vs. Florida
- Once material is defined, then volume, space, permitting and budget will be factors to consider



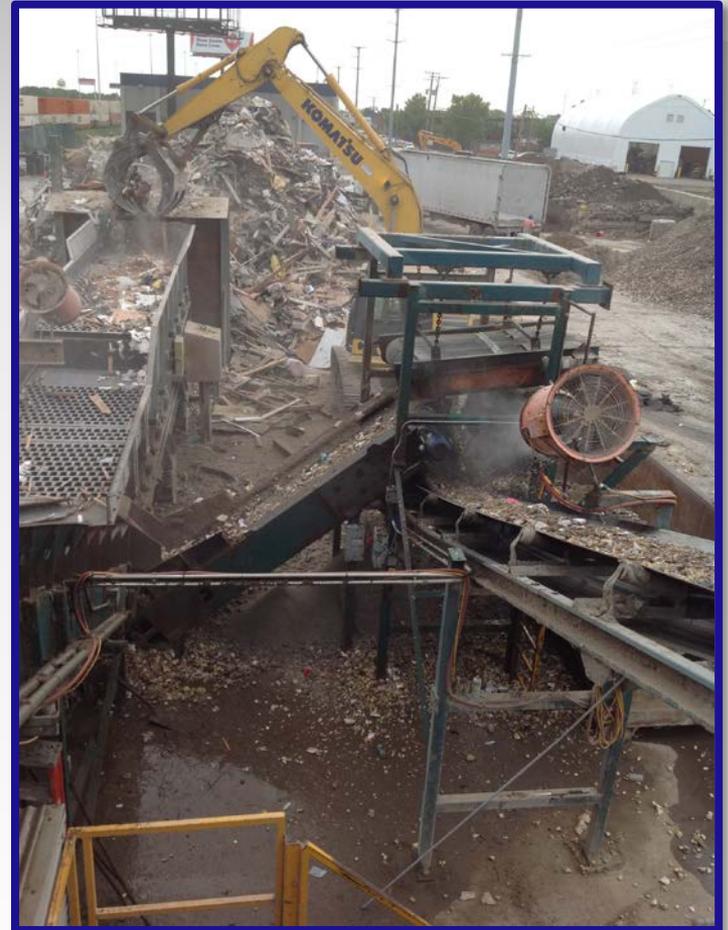
Define Inbound Material Stream

- Based on location, size of property depends on local permitting and this will determine facility structure and size of system/ tipping floor and load out areas
- Economics must make sense after considering all the factors
 - Inbound tipping fees vs. outbound options and outlets are important



Options for Recycled Materials

- How far from these options:
 - Transportation
 - Cost to dispose of and process your different types of materials
- Once that has been figured out, economics, permitting, construction, material flow (including outlets for materials) are next
- Then design the system



Sorting Systems

- Komatsu
 - PC-210 with Pemberton Grapple



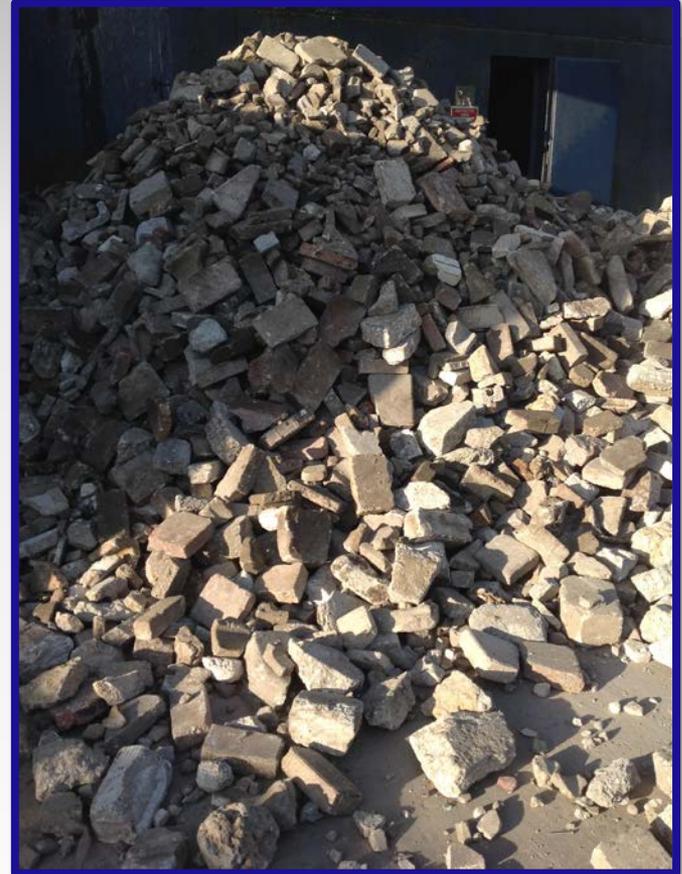
Sorting Systems

- Yellow Iron
 - Pre-sort and scalping the pile
- CAT
 - 262 with Grapple Bucket
- CAT
 - 950 with Grapple Bucket and Scale



Sorting Systems

- Start by removing large items and items that may harm/ not do well in system
 - Sheets of plastic
 - Large concrete
 - Metal
 - Mattresses
 - Tires
 - Liquids



Sorting Systems

- After removing large items, process materials in system
 - Plywood
 - Large wooden crates



Sorting Systems

- Start feeding material into Action Taper Slot Vibratory Screener (general kinematics, Erin Finger screen other options)
 - Easy maintenance, no hang-up of material
 - Accurate sizing of material
 - Strong design taper slot
 - Easy flow of material
 - Separate fines from materials
 - Use of a magnet to remove metal
 - Present material to labor in a nice and even stream of material



Sorting Systems

- De-stoner
 - Removes light fraction heavies to QC
- Remaining waste to floor or compactor



Sorting Systems

- Depending on preference and size of facility and costs there are different options
- The right option is key to high recycling rate, minimal downtime and repairs
- Simple straightforward and a system that can handle the different blends of materials which are constantly changing



Questions?

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