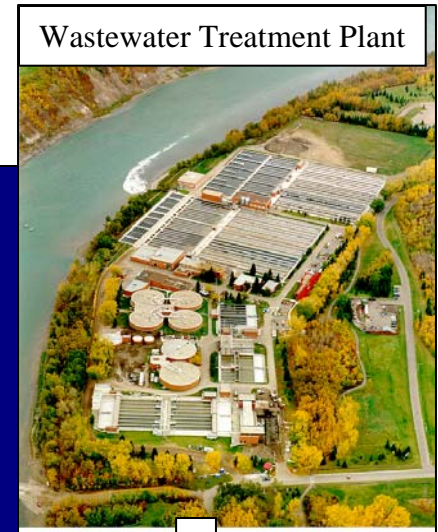


# Edmonton Composting Facility

- The Edmonton Composting Facility is the largest co-composter in North America.
- It occupies an area about the size of eight football fields: 38,690 square metres (416,500 square feet).
- Called a co-composter because it composts residential solid waste together with de-watered sewage biosolids.
- It can process 200,000 tonnes of residential waste and 25,000 dry tonnes of biosolids each year.





## Edmonton Waste Management Centre Composting Facility

Edmonton's residential waste, except recyclables, is trucked to the Edmonton Composting Facility. Sewage biosolids from the city's wastewater treatment plant are also sent to the facility.





## Stage 1: Tipping Floor

Garbage trucks unload waste materials onto the tipping floor, a large indoor concrete pad, at the Integrated Processing and Transfer Facility (IPTF).



The tipping floor is 19,094 metres square (205,526 ft<sup>2</sup>): the equivalent to approximately 2.3 CFL football fields

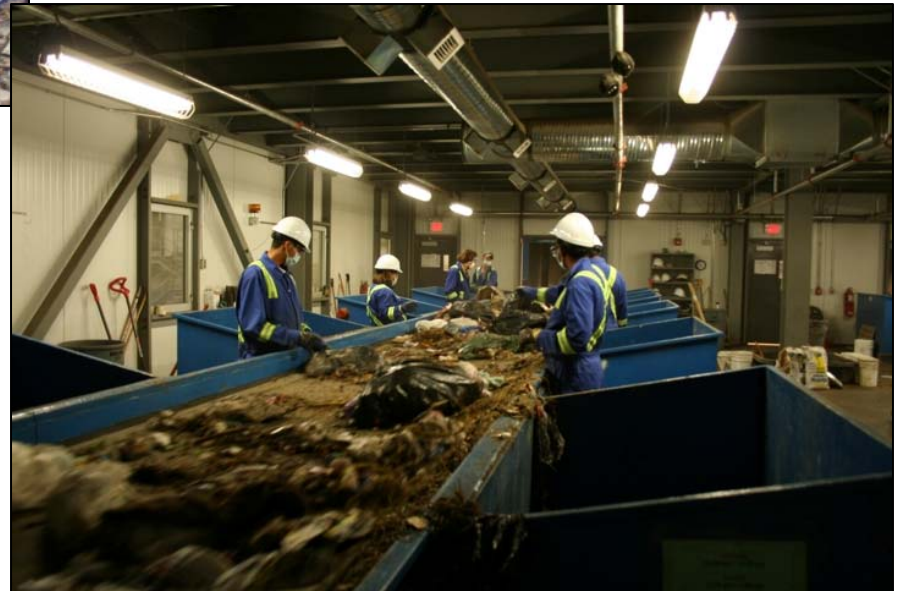


## Tipping Floor cont'd



A large backhoe with a grapple loads the waste onto conveyor belts for the trip to the sort room.

Workers in the sort room remove non-compostable and oversized items like pieces of furniture and household hazardous waste like propane tanks. Tires and propane tanks are recycled. Most other oversized material is landfilled.



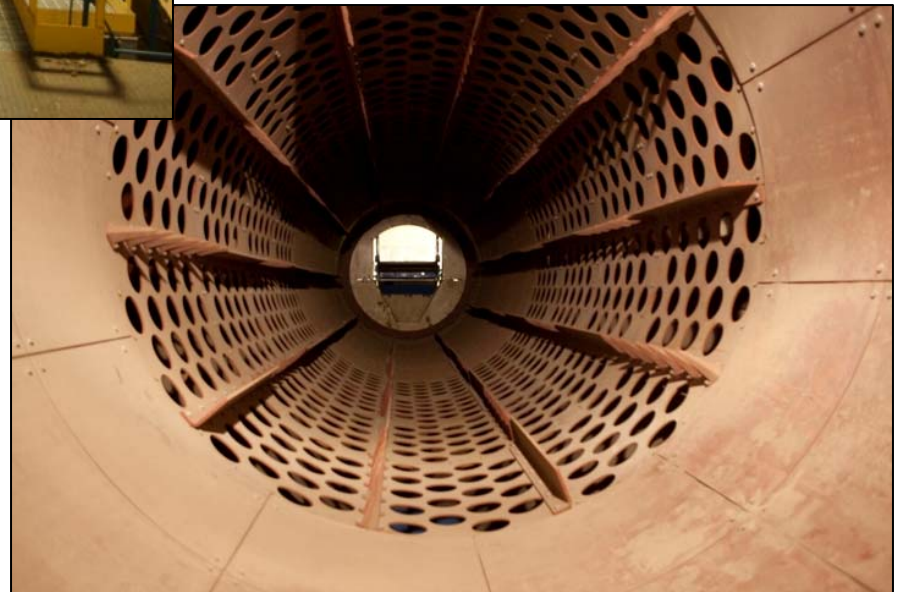


## Stage 2: Pre-screening



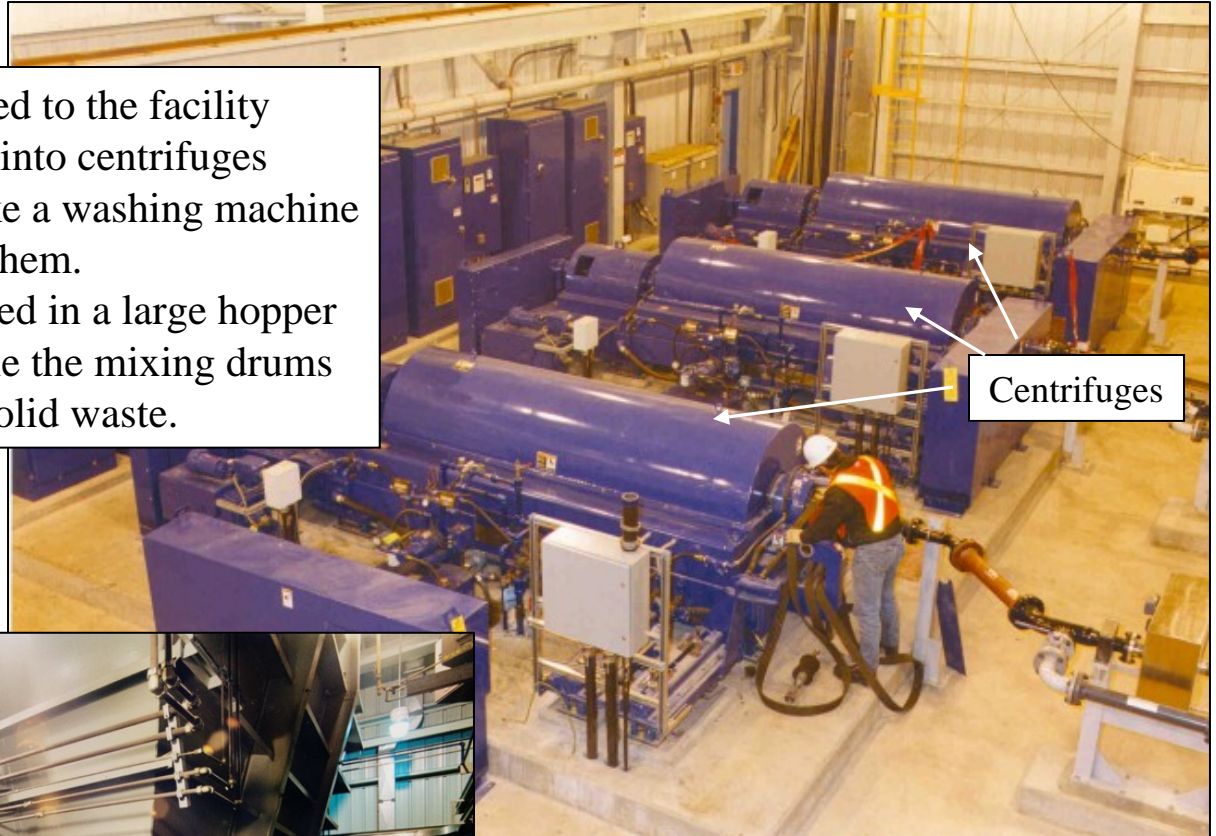
Compostable waste leaves the sort room on two conveyors for pre-screening in large trommel screens.

The trommel screens allow small waste to fall through the holes. Large material that cannot fit through the holes is landfilled. Waste that falls through the screens is sent to the Edmonton Composting Facility via a conveyor system.



## Stage 3: Biosolids Dewatering

- Biosolids, which are pumped to the facility through a pipeline, are put into centrifuges where a spinning action like a washing machine on spin cycle, “dewater” them.
- The biosolids are then stored in a large hopper until being injected into the the mixing drums together with residential solid waste.







## Stage 4: Mixing Drums



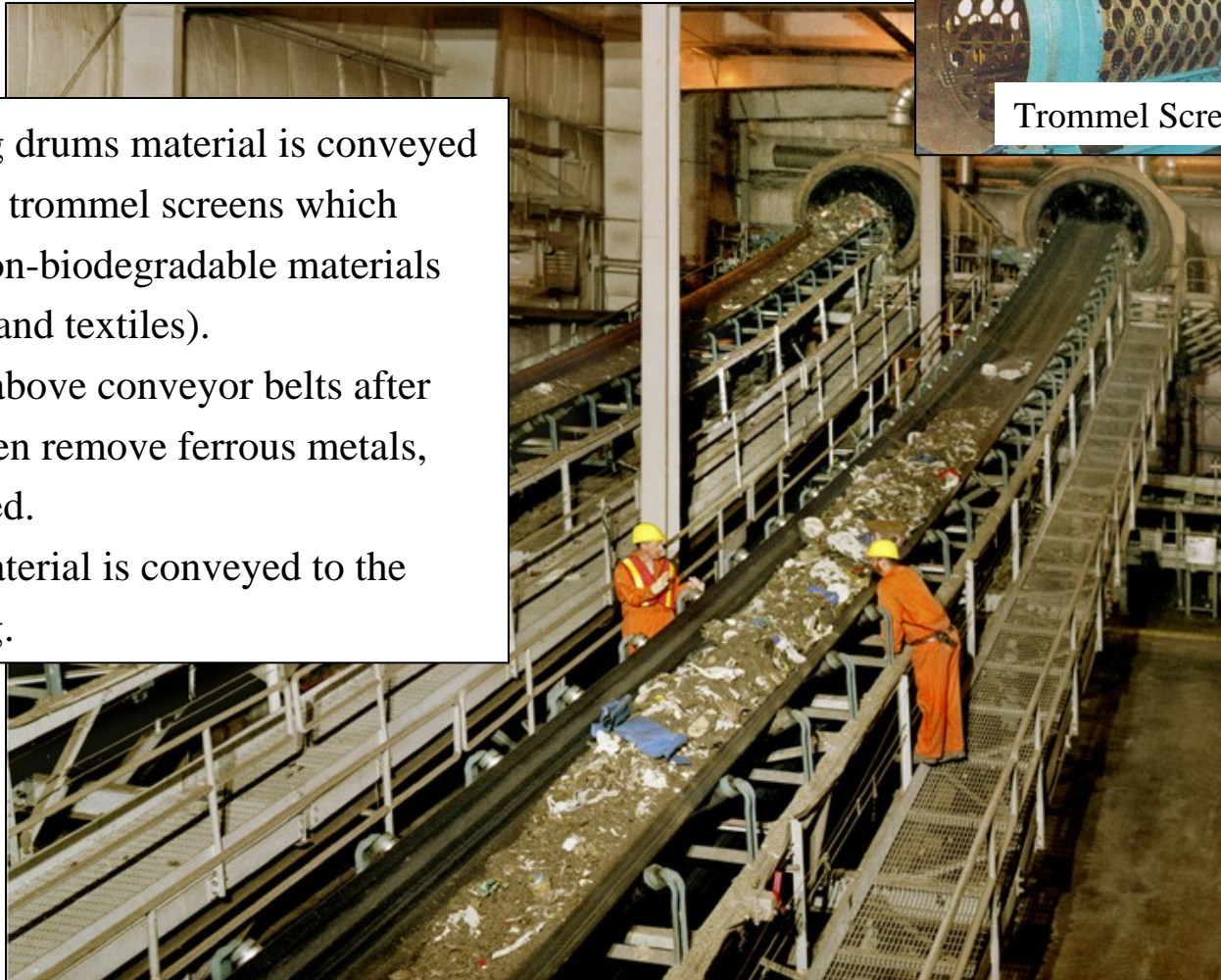
- Hydraulic rams push waste into one of five rotating mixing drums. Each drum is 74 metres (240') long - the length of six buses - and 4.9 metres (16') in diameter.
- Biosolids are injected into the drums together with the waste.
- Composting begins as the materials tumble together while travelling for 1-2 days from one end of the drum to the other.





## Stage 5: Primary Screening

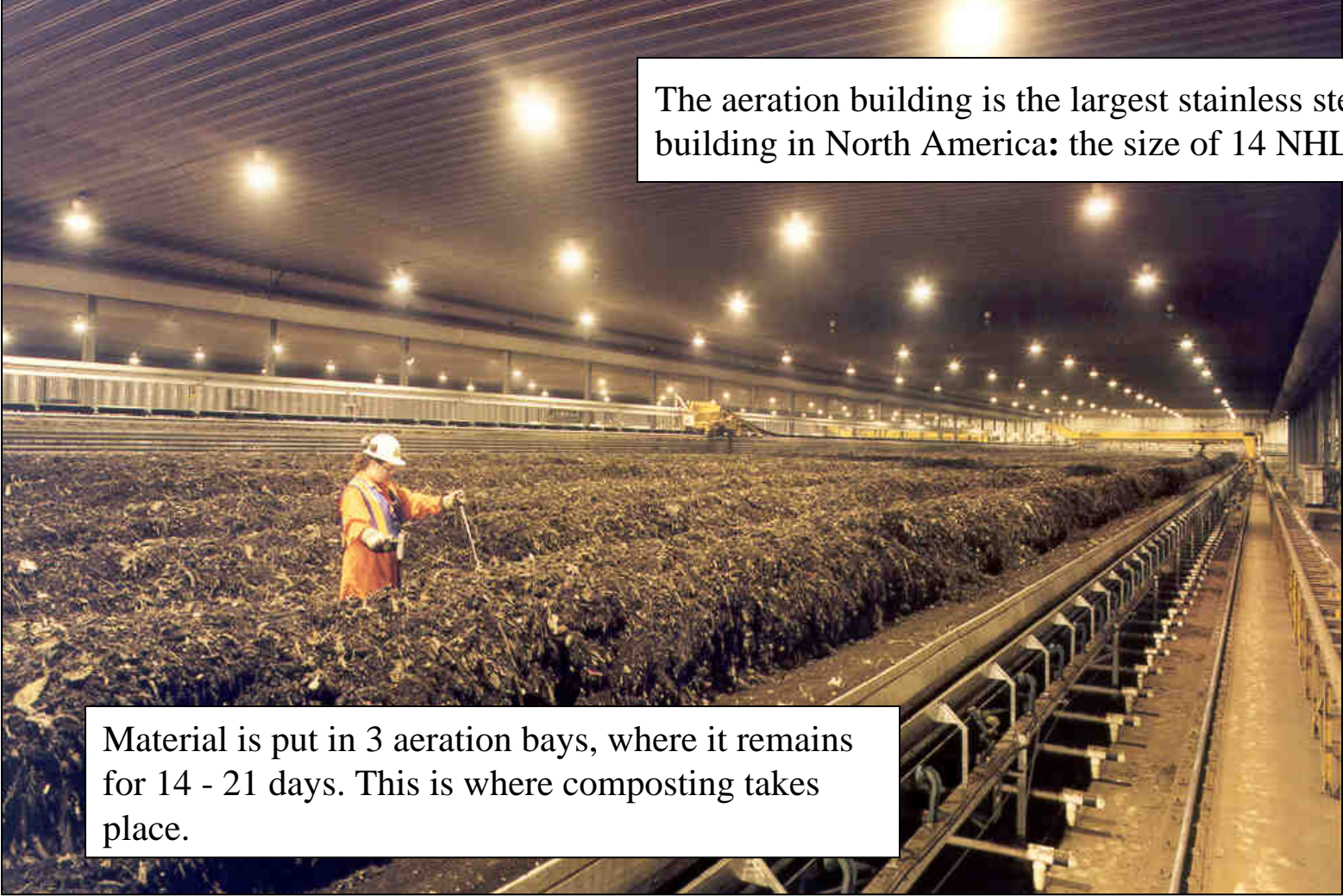
- From the mixing drums material is conveyed into two rotating trommel screens which remove larger non-biodegradable materials (mostly plastics and textiles).
- Magnets placed above conveyor belts after the trommel screen remove ferrous metals, which are recycled.
- Compostable material is conveyed to the aeration building.





## Stage 6: Aeration Building

The aeration building is the largest stainless steel building in North America: the size of 14 NHL rinks.

A wide-angle photograph of a massive industrial aeration building. The interior is filled with long, parallel rows of dark, textured composting material. A worker in an orange safety suit and white hard hat stands in the foreground, holding a tool. The ceiling is high with numerous bright lights, and the structure is made of stainless steel.

Material is put in 3 aeration bays, where it remains for 14 - 21 days. This is where composting takes place.



## Stage 5: Aeration Building cont'd



- Mobile augers, like the one pictured above, are used to turn the material (allowing in needed oxygen ) and to gradually move the material through the bay.
- The turning system also adds water as required.
- Compost reaches temperatures of over 55°C for at least 3 days, killing potentially harmful bacteria.



## Stage 7: Odour Treatment



- The composting process creates heat and moisture.
- The air in the composting facility is hot, humid and odourized.
- Odourized air is drawn down through composting material (providing O<sub>2</sub>) in aeration building and exhausted through biofilters located outside the aeration building.



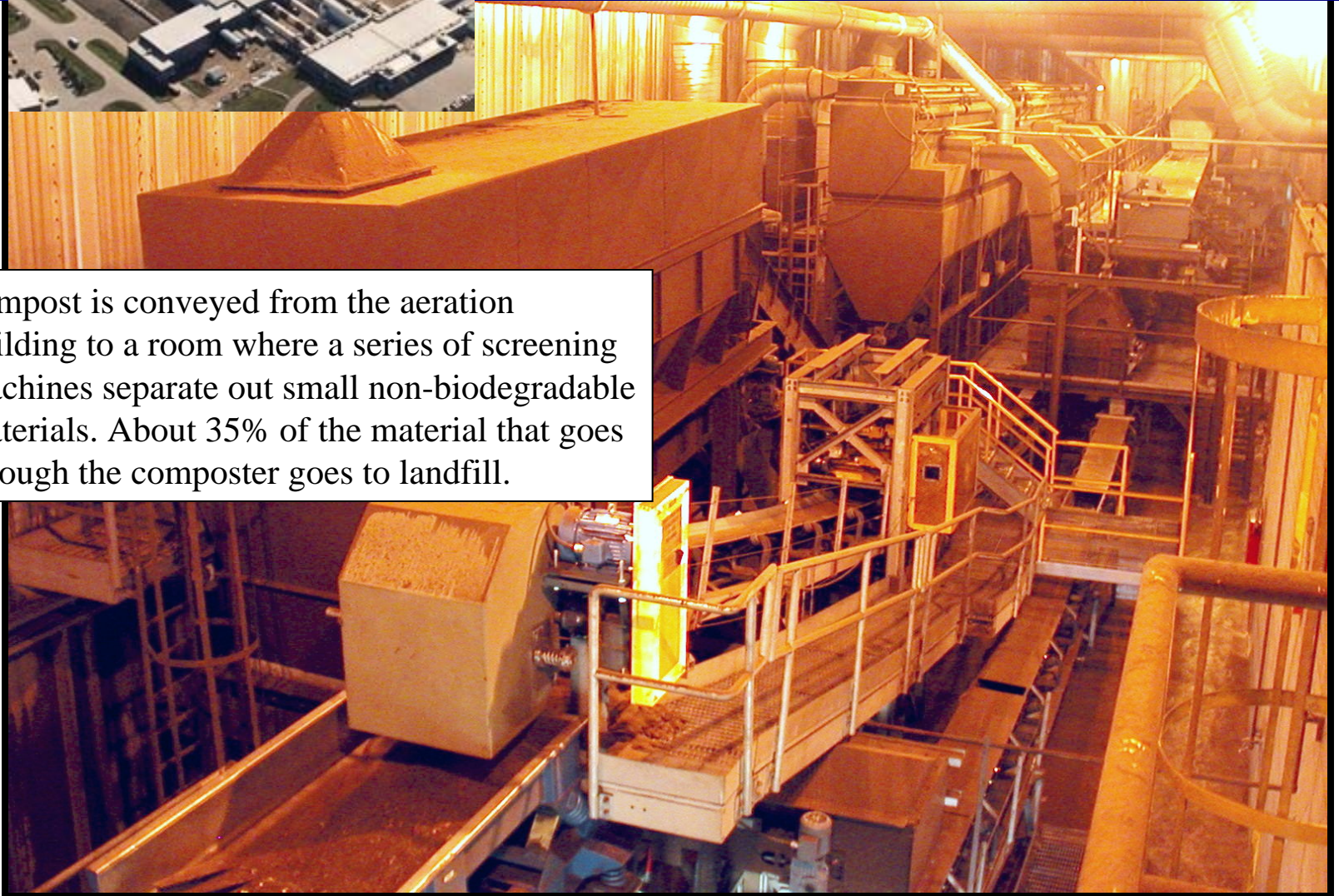
- The biofilters (A one metre thick layer of wood chips, bark and finished compost) remove the unpleasant odours.



## Stage 8: Compost Refining



- Compost is conveyed from the aeration building to a room where a series of screening machines separate out small non-biodegradable materials. About 35% of the material that goes through the composter goes to landfill.





## Stage 9: Compost Curing



- Afterward, the compost is arranged in rows of windrows or mass beds and cured over 4 - 6 months on an outdoor curing pad.
- It is then ready for use by farmers, landscapers, nurseries and oilfield reclamation companies.

