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the Africa waste project

welcome

Presentation on the
Africa Waste Project

September 1, 2009





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project partners

- **Van Sommeren International b.v.**
contracting, engineering & design,
manufacturing
Medical waste Processing systems
- **Visno Machinefabriek b.v.**
engineering, manufacturing & design
Waste Processing Systems
- **Geurts Technisch Adviseurs b.v.**
engineering & design
Industrial Automation
- **CBB**
consultant, project management
Civil Works



van Sommeren International b.v.
energy and environmental technology

Visno

engineering, manufacturing, maintenance



Geurts

Technisch
Adviseurs










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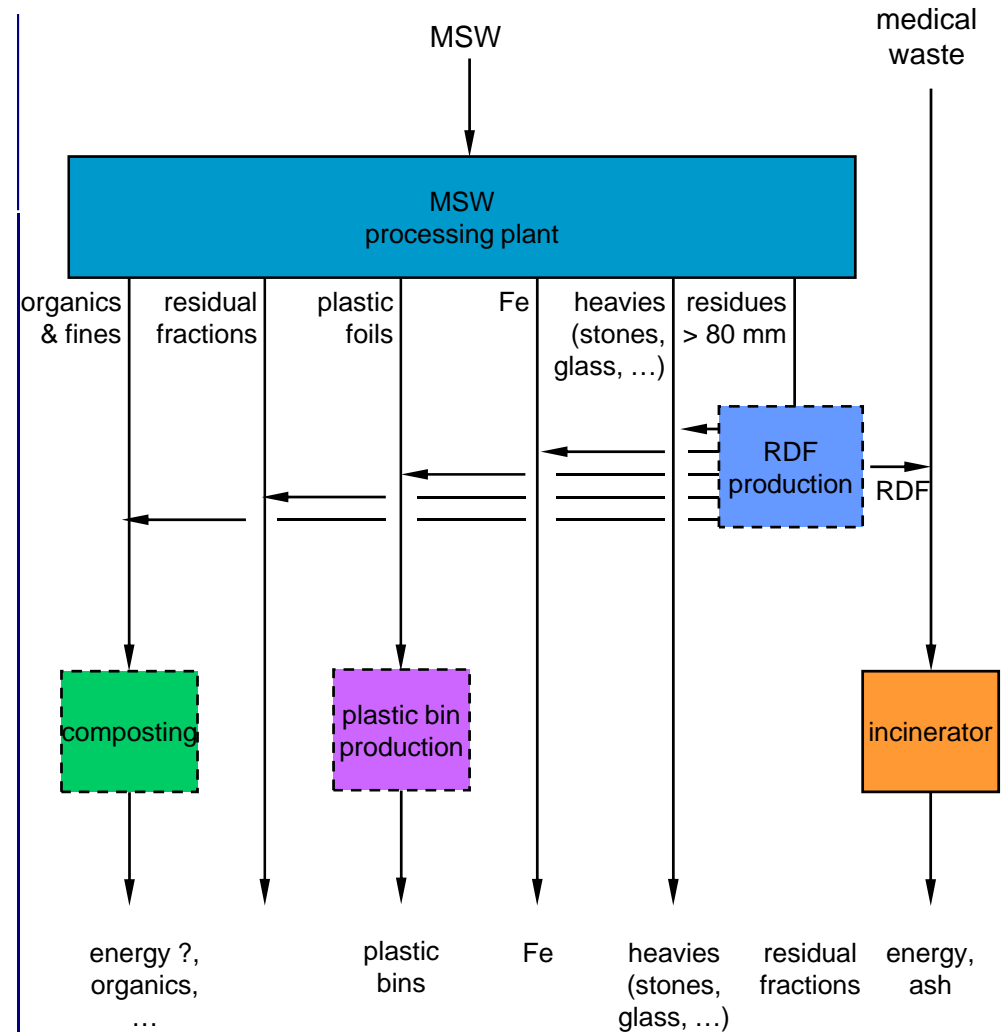


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project objectives & principle

- **project objectives**
 - minimizing land filling by maximizing material recovery / re-use
- **project lay out**
 - **BASIS**
 -  MSW processing plant
 -  medical waste incineration
 - **OPTIONS for further processing**
 -  composting
 -  plastic recycling
 -  RDF pellet production





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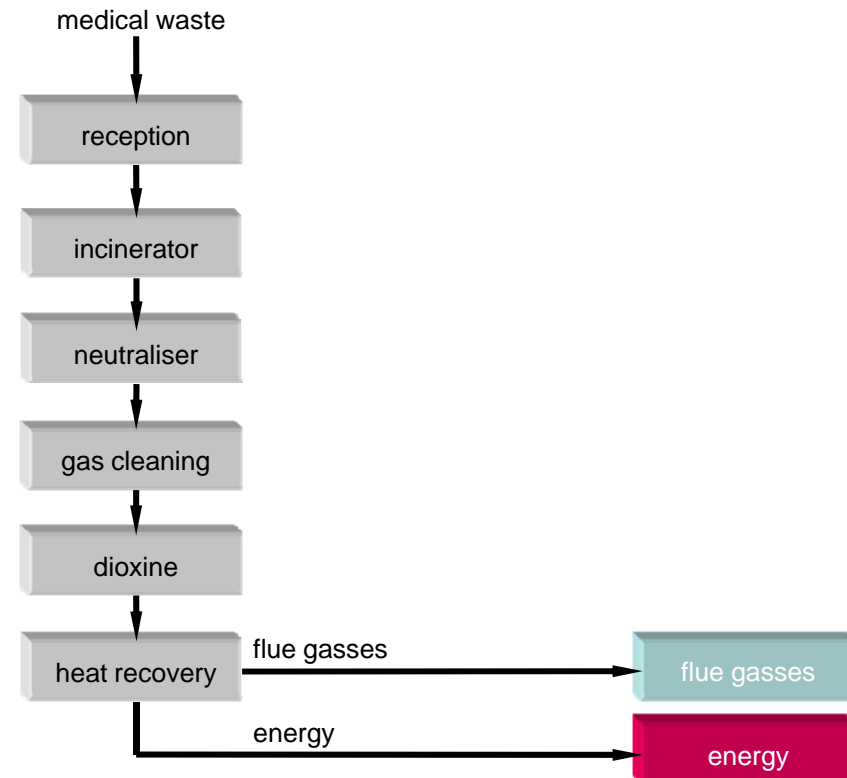


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medical waste processing

- **objectives:**
 - hygienic disposal
 - energy recovery





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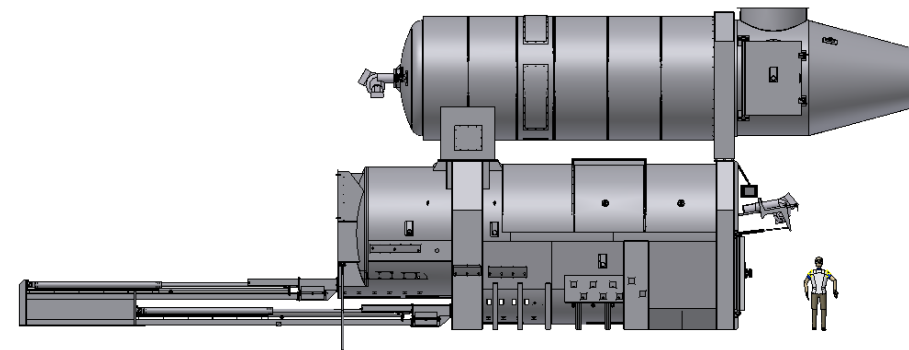


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MSW incineration
(+ optionally RDF incineration)

- VSP-1200 side view





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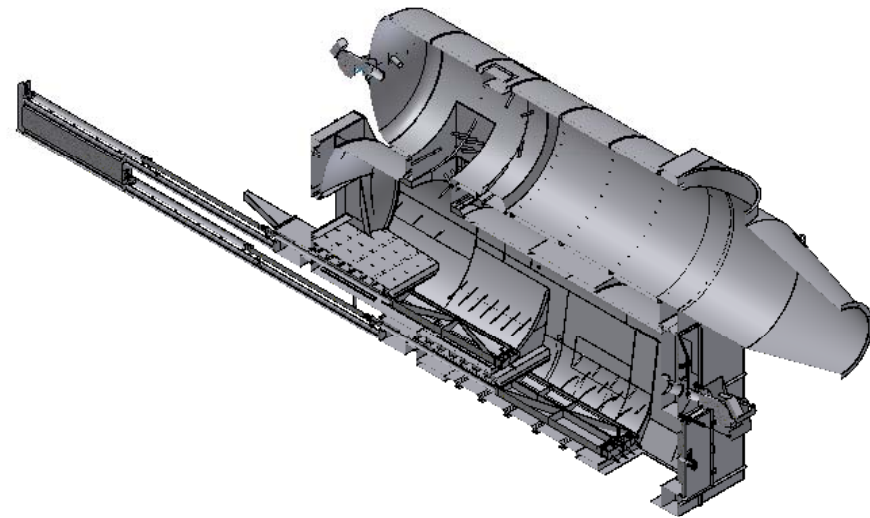


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MSW incineration
(+ optionally RDF incineration)

- VSP-1200 isometric section view





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Municipal Solid Waste (MSW) key data

input

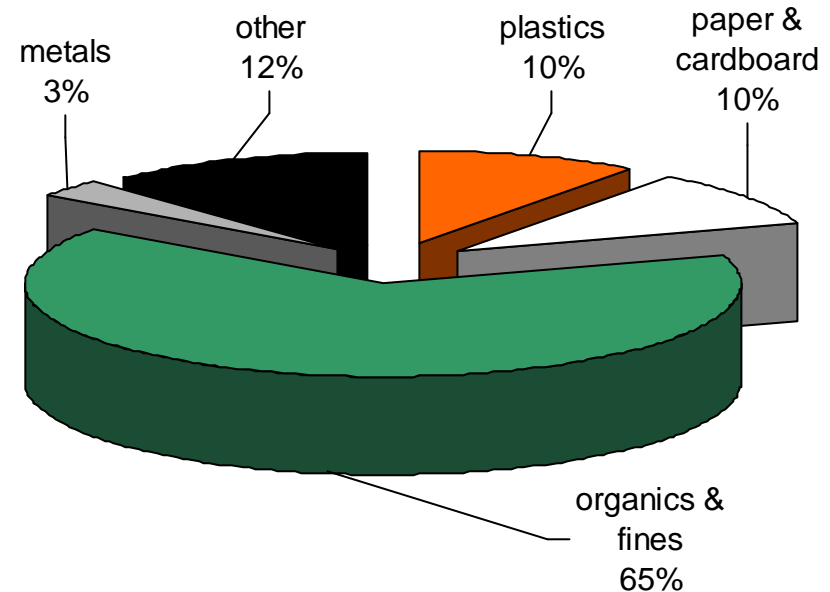
- material: MSW
- amount: 1.250 t/d

input characteristics*

- bulk weight 200 – 250 kg/m³
- organic content high
- moisture content high

* estimates

Esfahan MSW Composition Estimate*



*experience based composition estimate, figures may vary.



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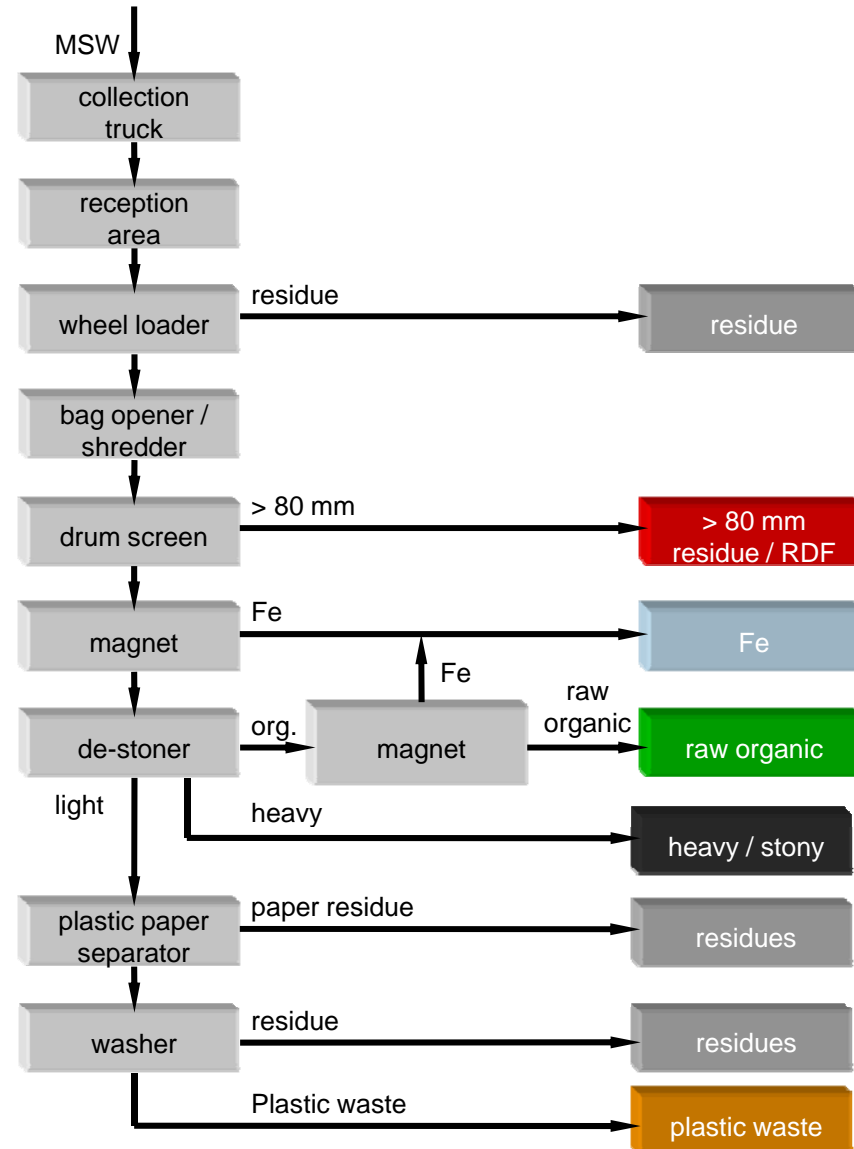
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MSW processing plant

objectives:

- maximizing material recovery for recycling / further processing:

- metals
- organics
- plastics
- "RDF"
- stony fraction
- residues





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MSW processing: reception area
(example)

- minimal odour emissions
- MSW input composition check
- controlled process feeding





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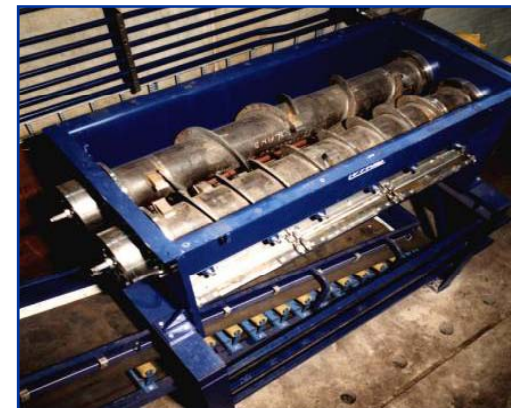


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MSW processing: bag opener / shredder

- tearing open plastic bags
 - shredding of oversized material
 - **no** shredding of paper, plastic foils,
-
- capacity (MSW): 40 t/hr
 - output: <150 mm
 - installed power: 250 kW_e





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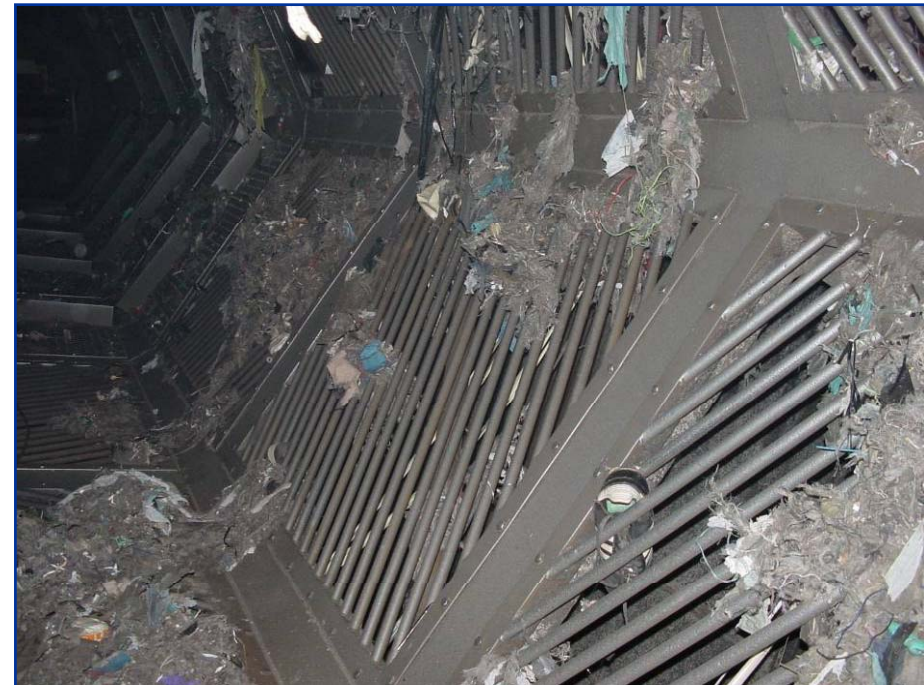


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MSW processing: drum screen

- separation in two fractions:
 - < 80 mm (**organics**)
 - > 80 mm (**residues** "RDF")
- capacity (MSW) 80 t/hr
- dimensions
 - diameter 3 / 3,8 m
 - screening length 14 m
- drive hydraulic
- installed power 90 + 4 kW_e





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MSW processing: de-stoner

- cleaning organic fraction by separation of:
 - **heavies** (stones, glass, wood, metals, ...)
 - **lights** (paper, plastics, ...)

- capacity (organics): 35 t/hr

- dimensions
 - width: 1.200 mm
 - length: 5.200 mm

- ventilator + cyclones:
 - capacity: 30.000 m³/hr
 - installed power 37 kW_e





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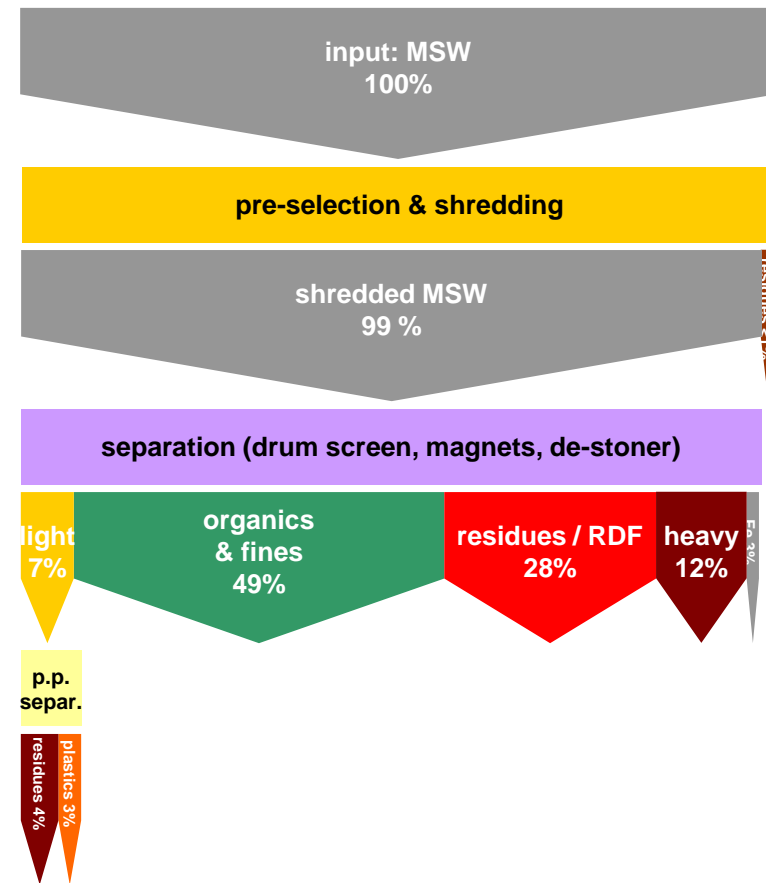


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MSW processing: mass balance
(simplified)

estimate,
based on assumed MSW composition





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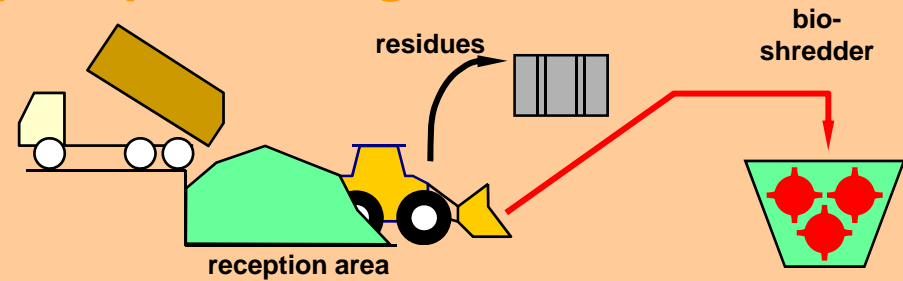


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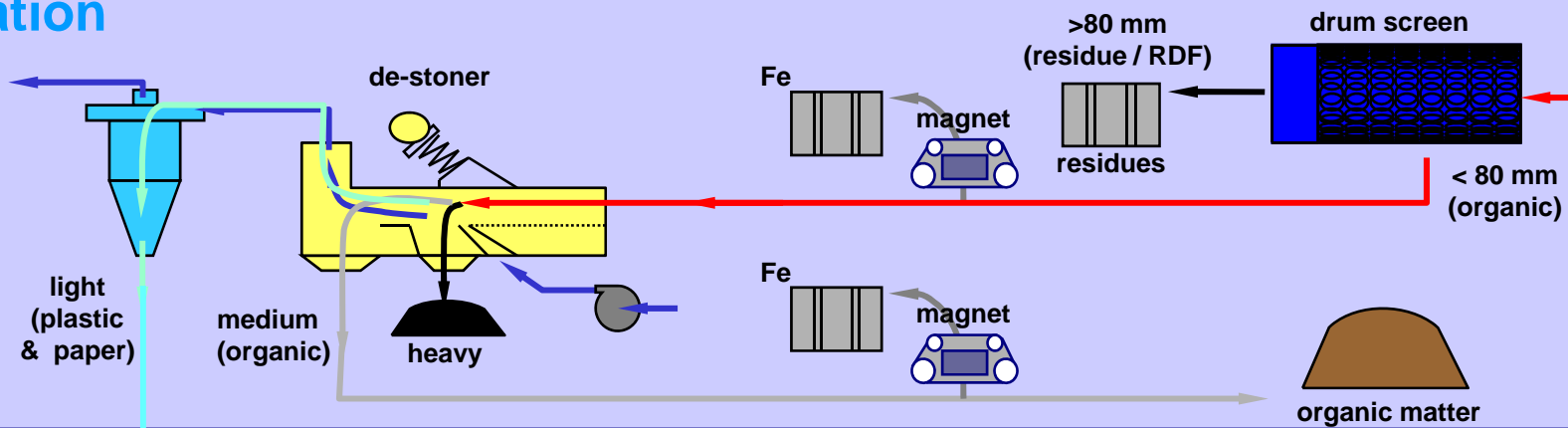
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MSW processing: scheme (simplified)

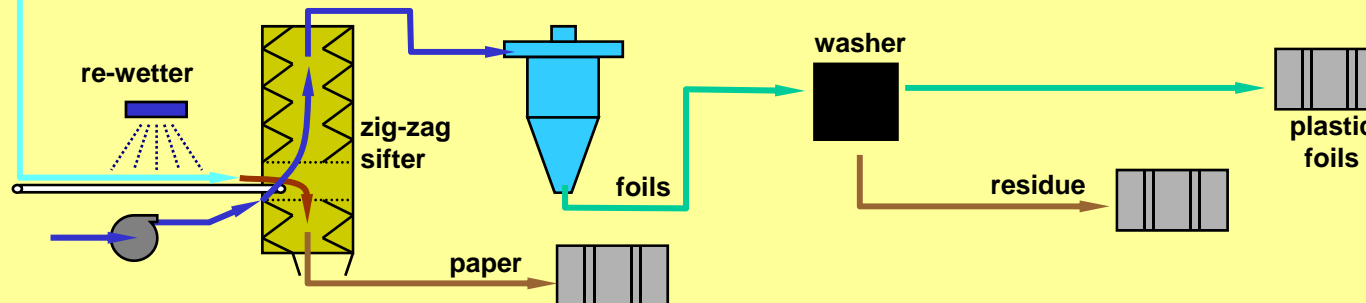
pre - processing



separation



plastic paper separation





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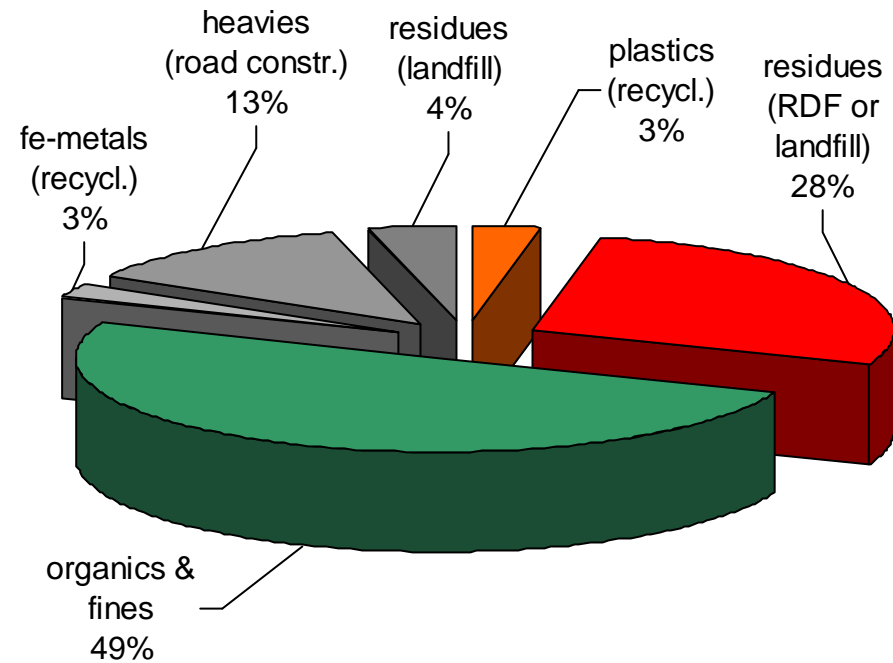
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MSW processing: outputs

- outputs of MSW processing plant

Esfahan MSW Preliminary Composition Estimate





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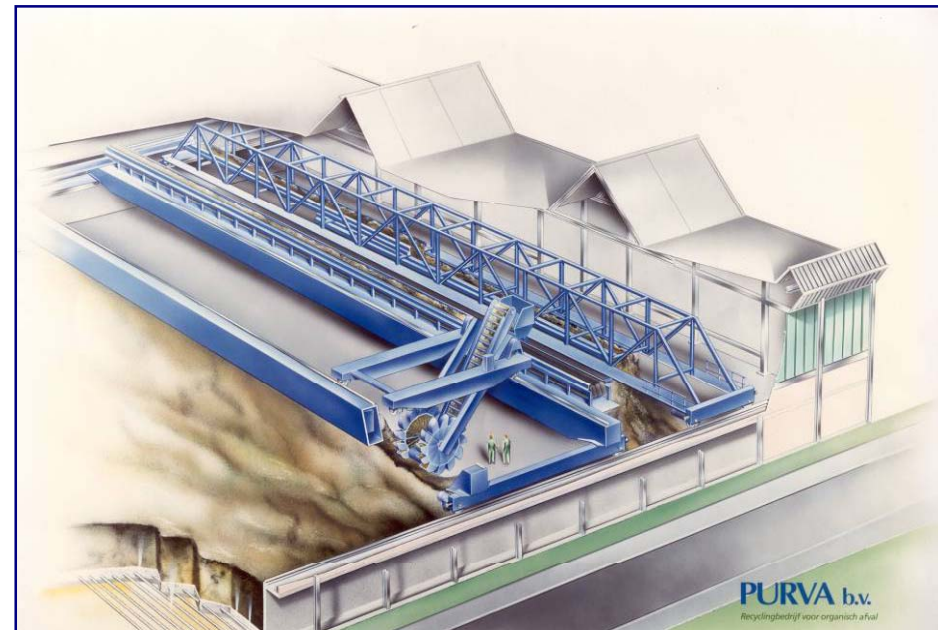


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follow up options: composting

- Example: closed composting Purva
- year of construction: 1992
- personnel: 12 pers.
- operational hours: 24/24
- input: bio waste 80.000 t/a
- output:
 - compost: ca. 40.000 t/a
 - others: Fe/stones/residues vapour





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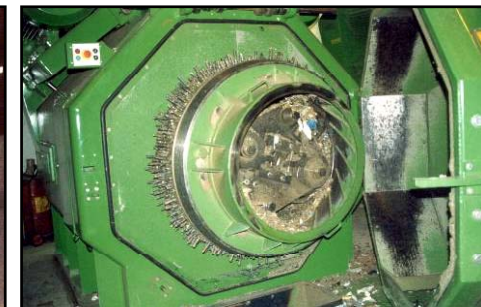
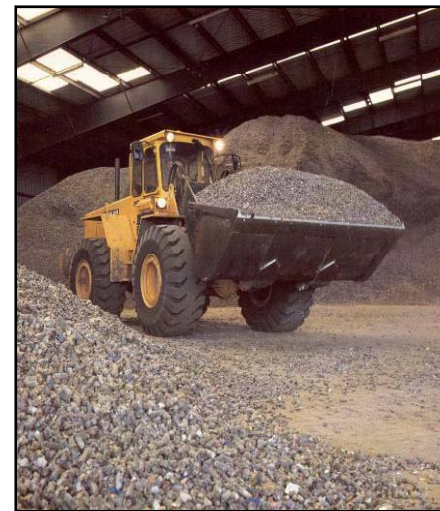
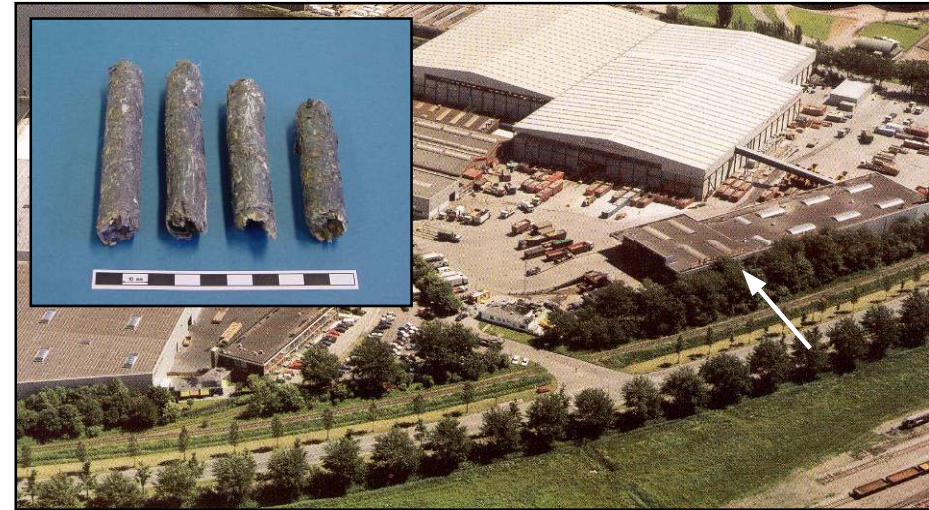


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follow up options: RDF production

- Example: Icopower Amsterdam
- year of construction: 1984
- personnel: 20 pers.
- operational hours: 100 hr/wk
- input: dry commercial waste 150.000 t/a
- output:
 - RDF-pellets: ca. 50-60.000 t/a
 - others: FE/organics/residues
vapour





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end & discussion