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Developing best practice guidelines for particulate emissions from cane cleaning systems.

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Sugarcane Dry Cleaning

- A number of systems already on the market;
- Actual separation process is approaching ‘Mature Technology’ stage;
- Most current systems use significant volumes of air to achieve the separation process;
- Currently there is minimum attempt to recycle this air.

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Air Emissions

- Larger systems conservatively exhaust up to 150m^3/second from the process.
- The exhaust air will contain some amount of:
  - In-organic dust (silicates etc);
  - Plant fibre; and
  - Plant pith.

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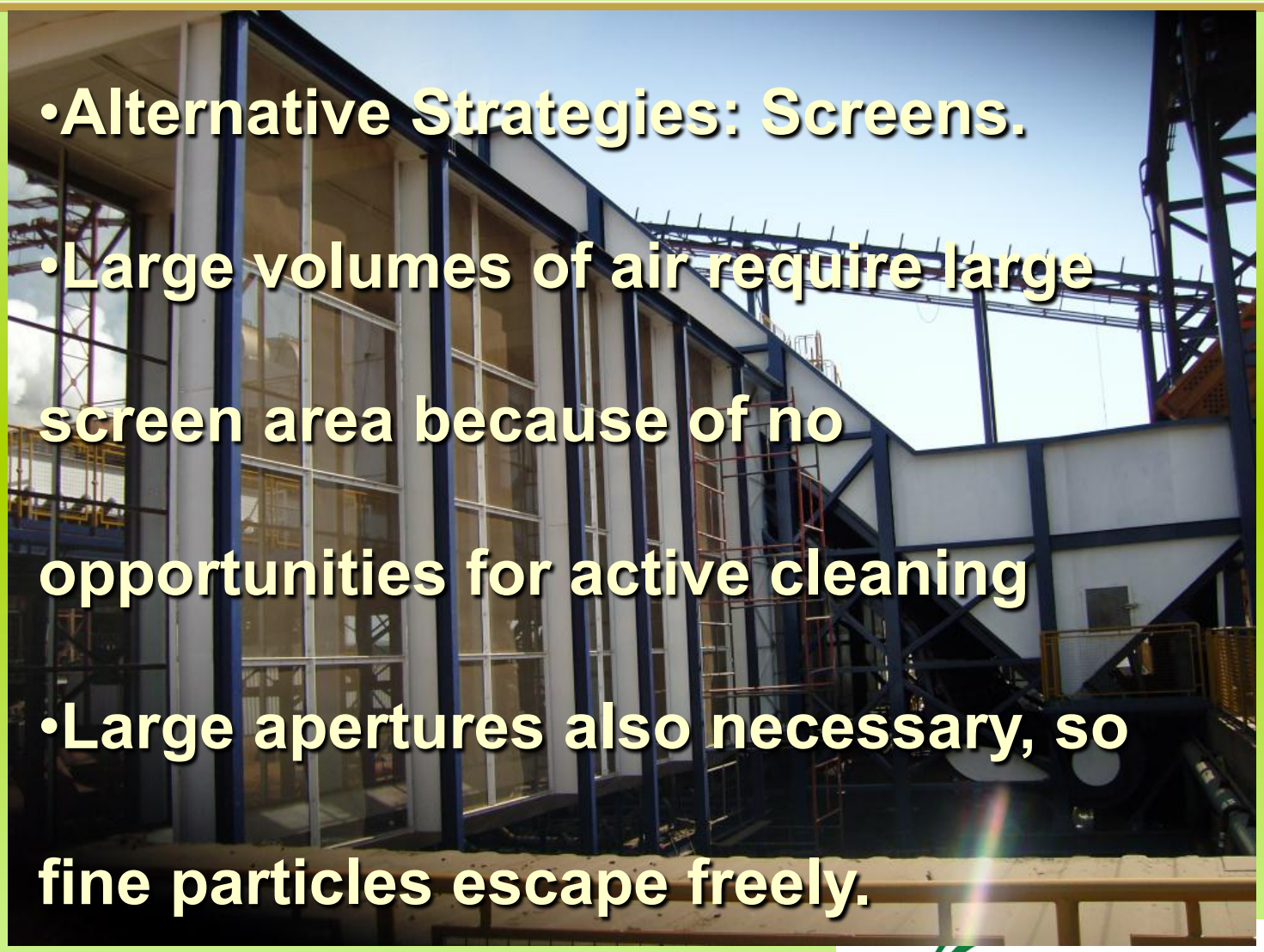
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The water curtain strategy is only partially effective.

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Ducted trash: High air velocities results in dust and organic material being forced through the screens.

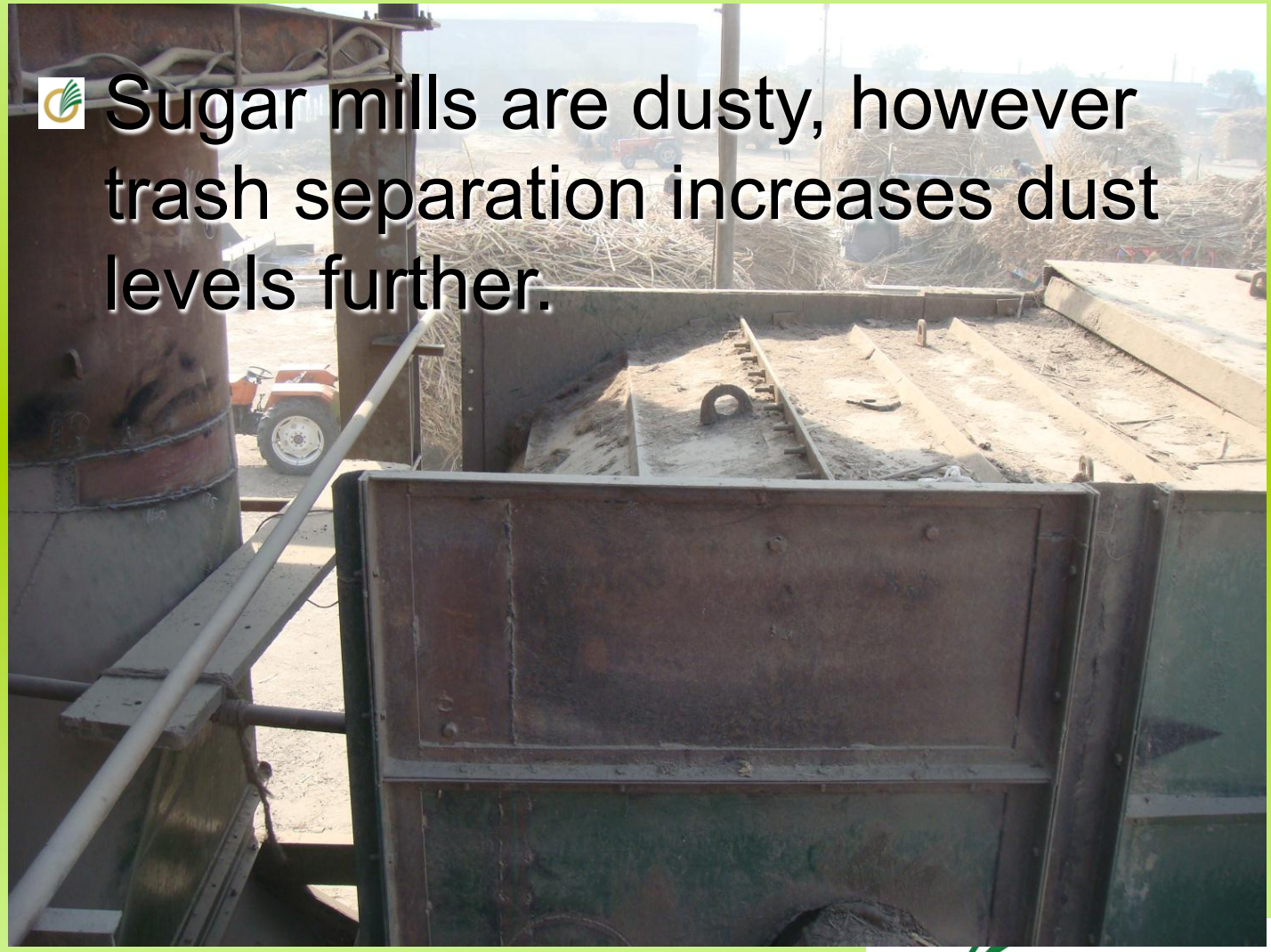
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- Sugar mills are dusty, however trash separation increases dust levels further.

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Direct Implications

- Dust Pollution:
  - Airborne
  - Settling dust in local area
- Possible environmental hazard:
  - Bagacillo?
  - Local public health (community/workers)?
  - Bagassosis?

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Sugarcane Dry Cleaning: dust nuisance





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Further Implications

- Non-compliance with local emissions standards/regulations
- Possible future litigation (community/ employee health)
- Possible restrictions on operation through ‘knee jerk’ regulation.

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Potential Solutions

- Quantify the problem (measure actual emissions/background levels).
- Work towards determining ‘acceptable levels’
  - Community inconvenience;
  - Community health;
  - Environmental pollution.
- Determine economically achievable levels.
- ‘Self Regulate’ / Industry best practice.
- Engineering solutions.

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Engineering Solutions: Air recirculation, Mauritius



The magnitude of the problem must be properly defined as engineering solutions such as recirculation add significantly to cost and complexity of the project.

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Engineering Solutions: Air recirculation, Mauritius



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Best Practice Guidelines:

- Discussion!

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Sugarcane Dry Cleaning: Trash pre-processing may increase potential nuisance



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