IMA-EUROPE 2024
REAL TIME AND DMP LEARNINGS

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SIBELCO

Learning from DMP

Job Function	2021	2022
⊟ **Bagging operator**		
KBL	0.0539%	39.2195%
FMR	0.0992%	15.6584%
Hlubany	0.0003%	0.0000%
Brake	0.3059%	4.4019%

Job Function	2021	2022	2023
⊟ **Quarry operator - Wheelloader**			
Hohewiese	1.4091%	8.9941%	2.9667%
Pfeul	0.1413%	8.9941%	0.0000%
Meissen	3.1870%	2.6384%	0.2428%

Job Function	2022	2023	2024
⊟ **Laboratory**			
Mios	1.6131%	12.4500%	0.0000%
⊟ **Wet process operator**			

Why we increase personal exposure in job functions where technical improvements were successfully implemented in the past ?

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Dust Control Techniques
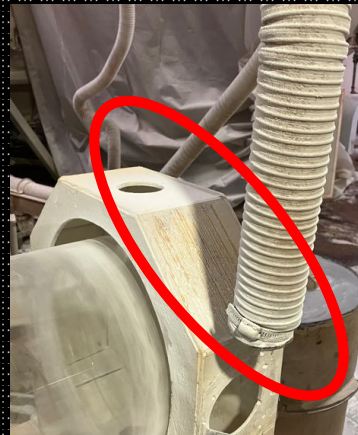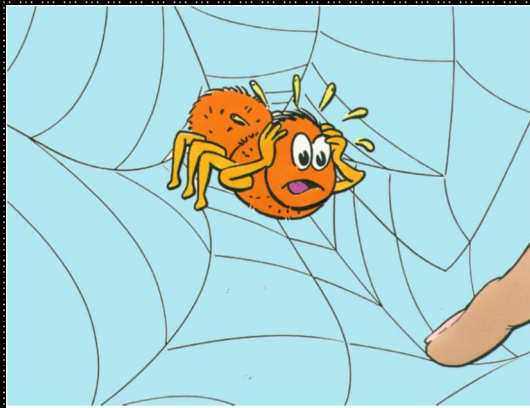
Laboratory Cabinets

Conveyor Belts

Dedusting installation

A change affects all parts of system!

Worn-out and near worn-out pieces need to be replaced via a preventive maintenance program;

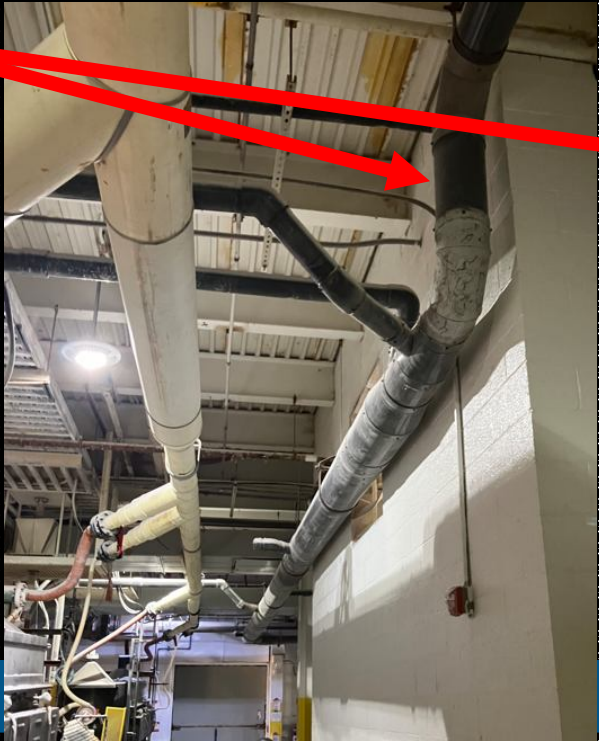Improve concept simply through a good wear-resistant material piping.
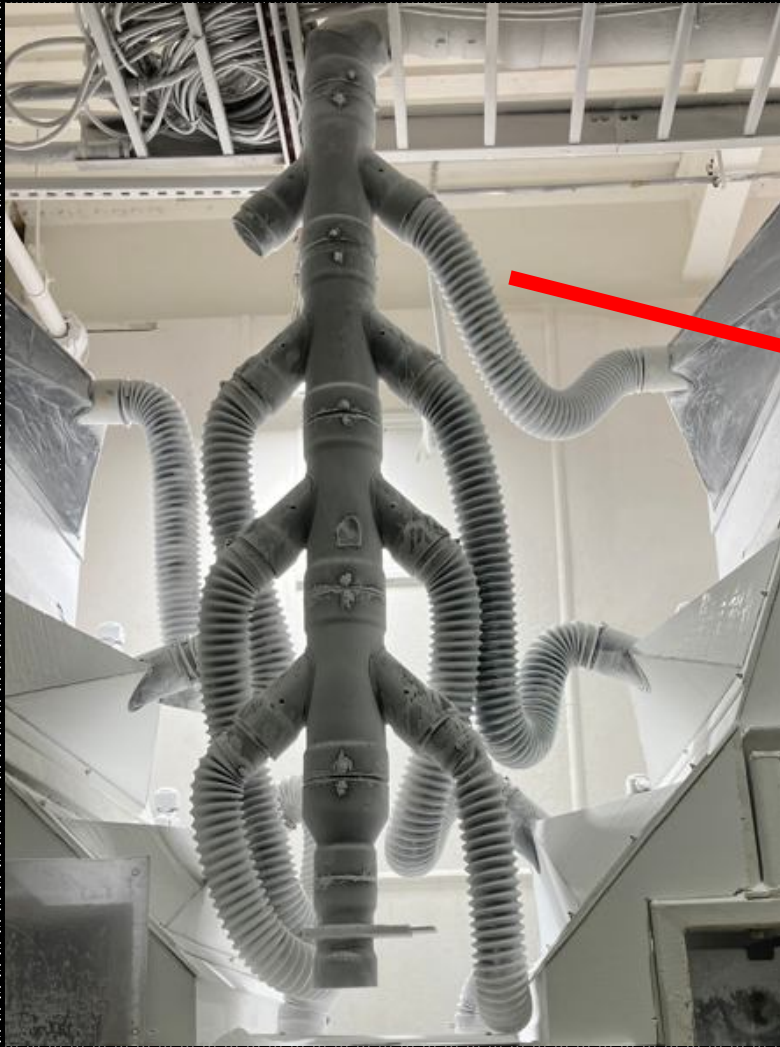
safe habit

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Dedusting installation

No map for the existing dust/fumes collection system.
No verification of dust/fume filters if working properly

Small filter for dedusting systems with many LEV

Dedusting installation

Flexible Ducts
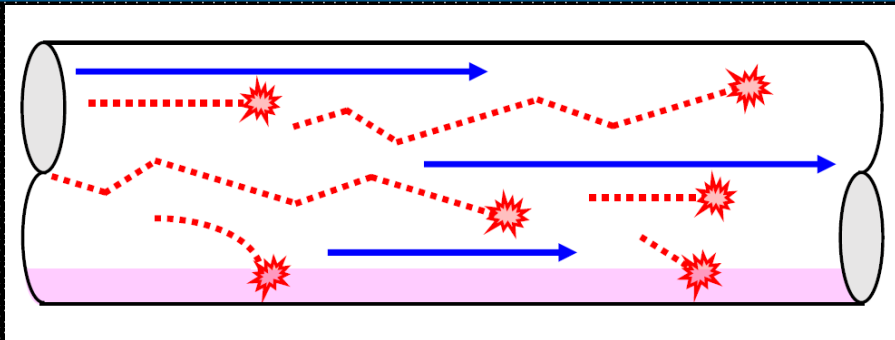
- Many fittings
- Higher pressure drop

Action:
Use as much rigid duct as possible
Use flexible duct only where
necessary: Screening

Dedusting installation: Conveying Velocity

Insufficient Conveying Velocity can generate blockages and collapse of pipes

safe habits save lives
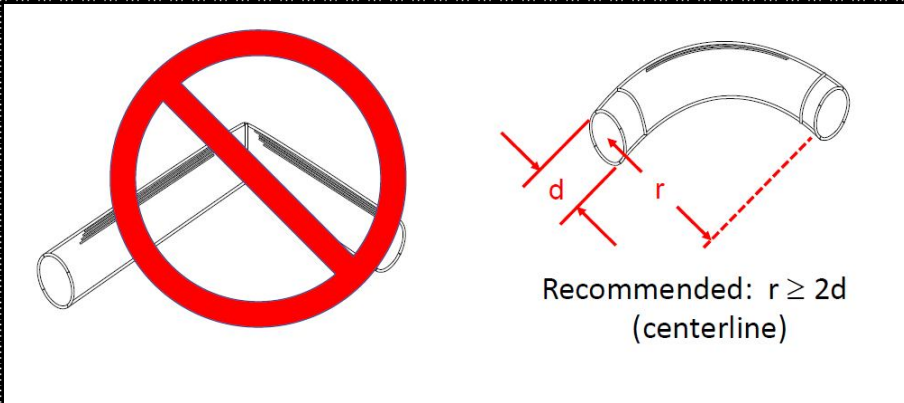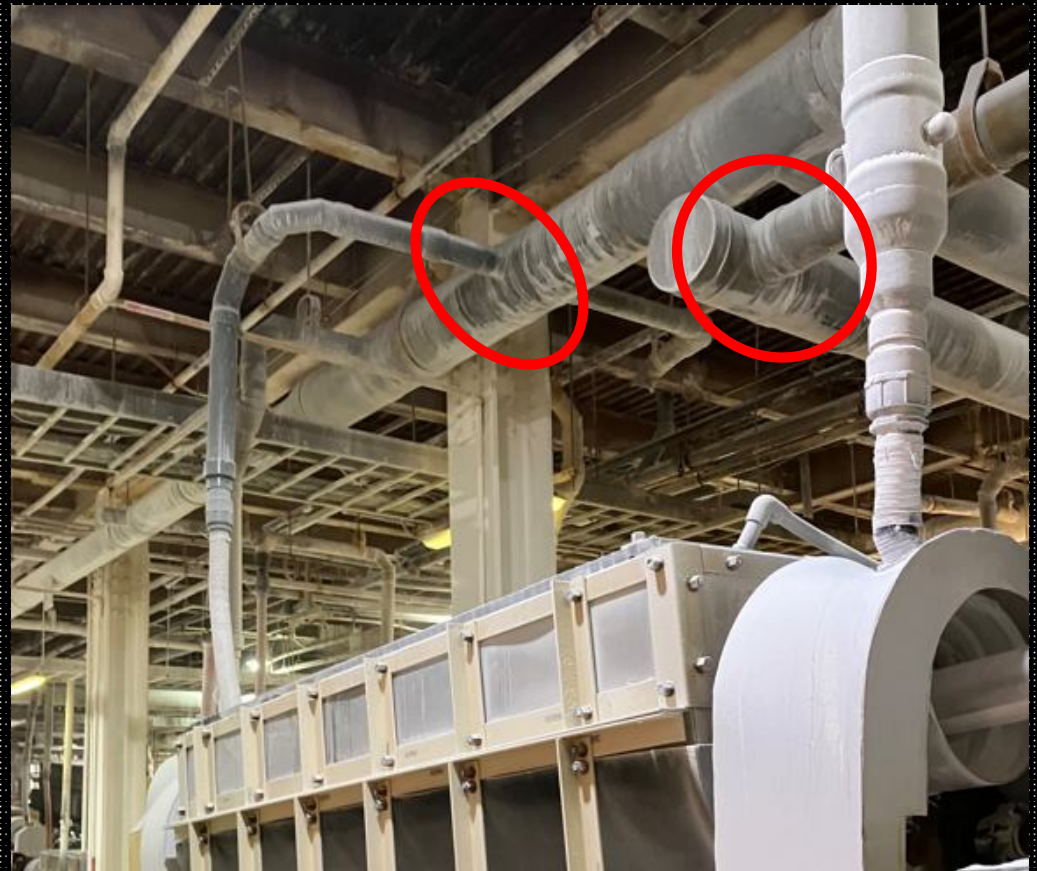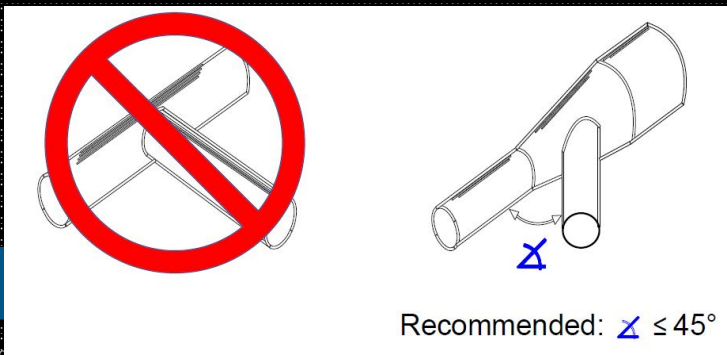
Use "Good" Elbow Design

Recommended: $r \geq 2d$
(centerline)

Provide Good Entry Design

Recommended: $\angle \leq 45°$

Sufficient Conveying Velocity
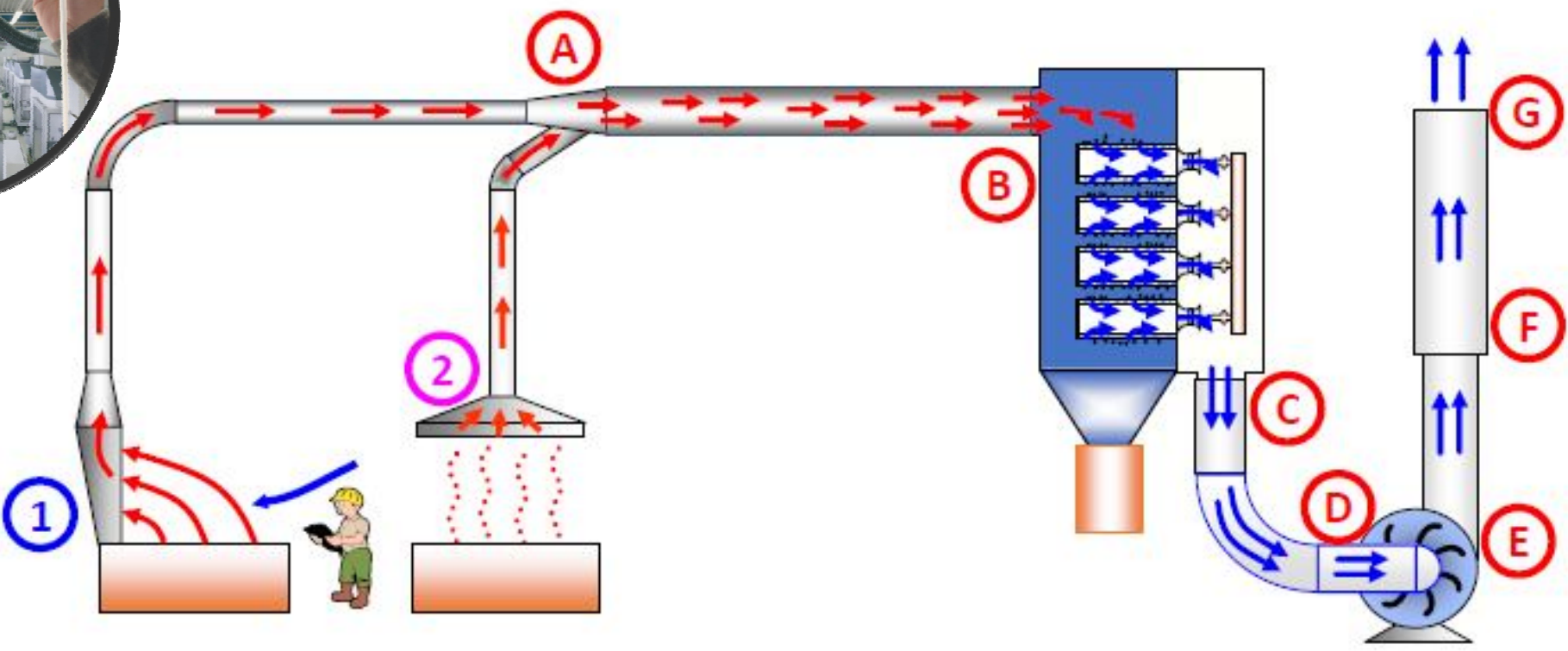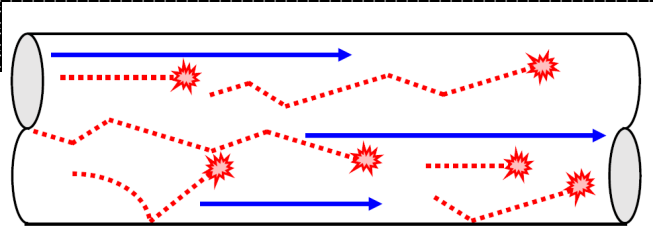
Housekeeping

Check the condition of the filter as recommended by the manufacturer and keep **the interior of the cabin clean and floors**

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Housekeeping

Finish cleaning with water

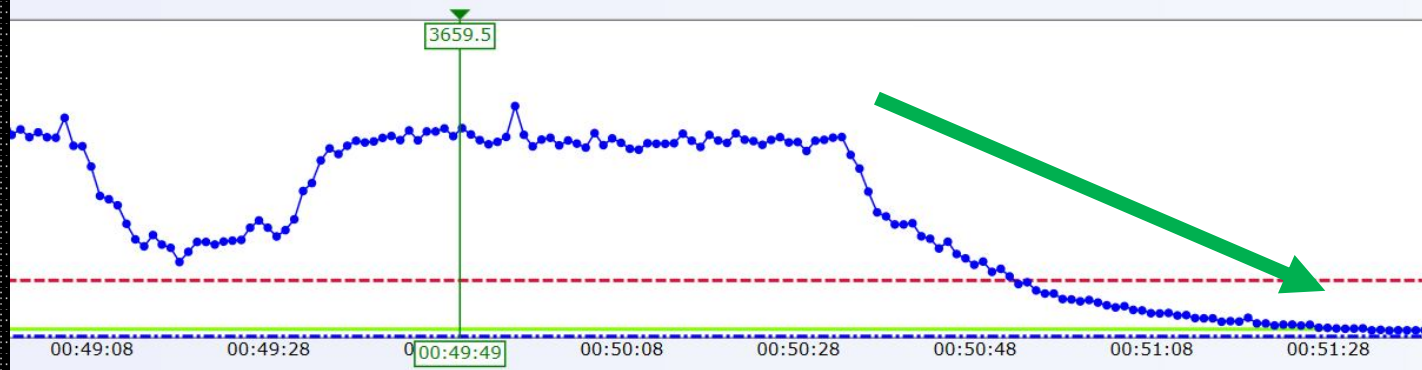**Housekeeping floors easy to clean**

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Real time monitoring

Filtration of cabin is working well
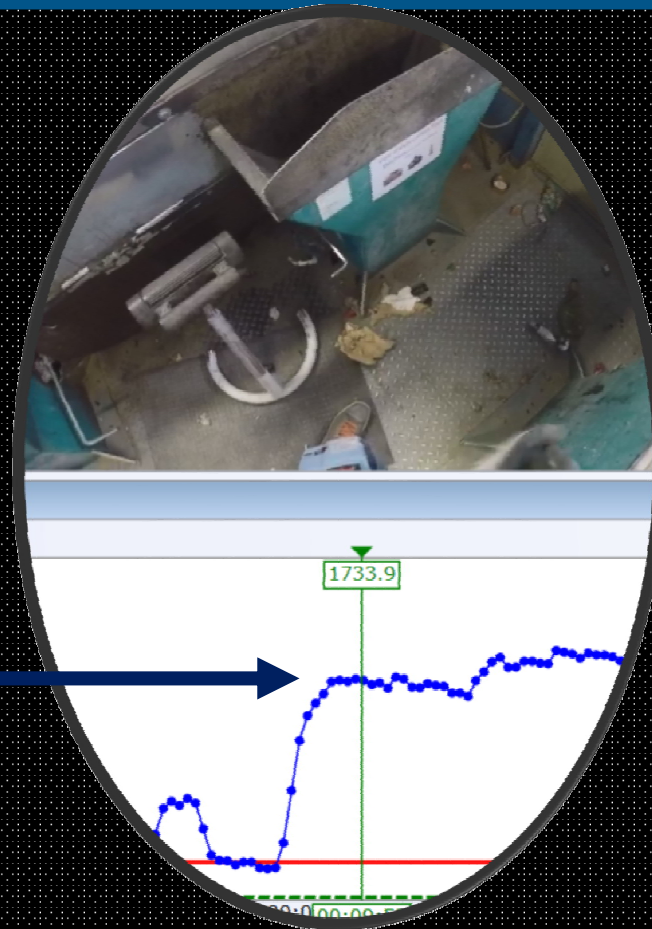
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Mobile equipment HEPA Filters

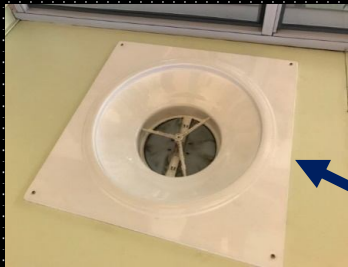

HEPA filters for mobile equipment cabins

Control rooms

Control rooms

Outdoor air

Clean air intake

Filters: G4, F6 and HEPA

Control Rooms: HEPA Air Filtration

Breakdowns

Enter building

16.1

00:54:25   00:55:11 5   00:56:05   00:56:55

Exit building

1046.6

00:56:55   00:57:45   00:58:17 0:58:35   00:59:25
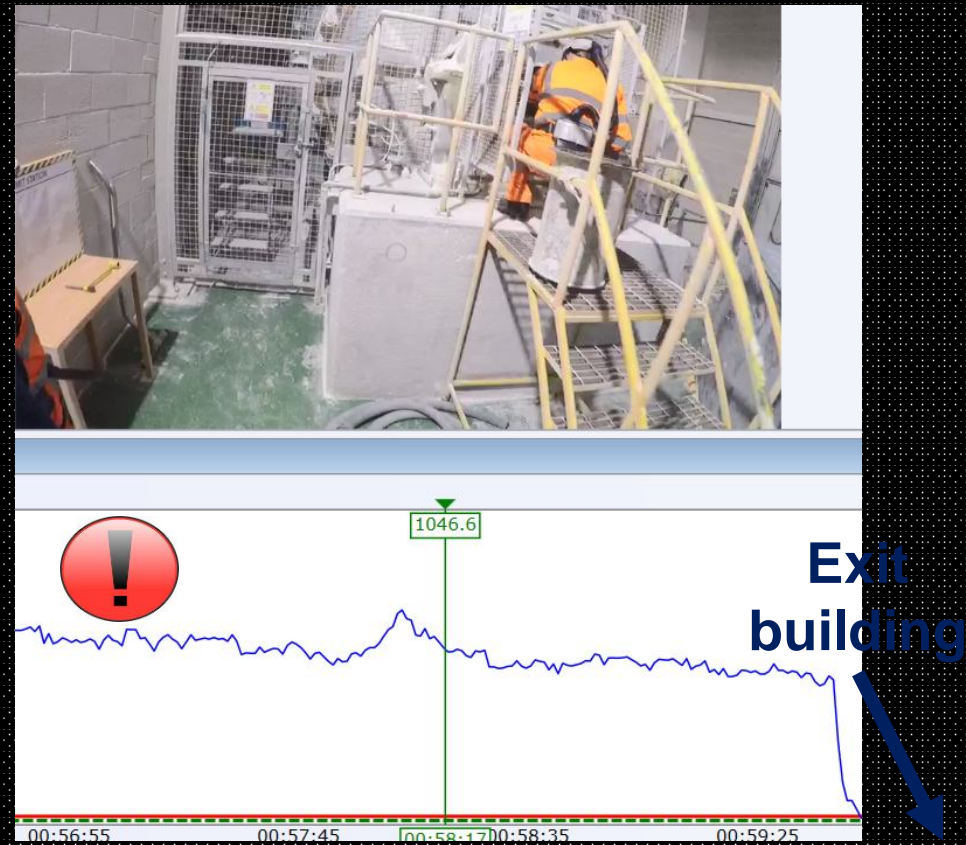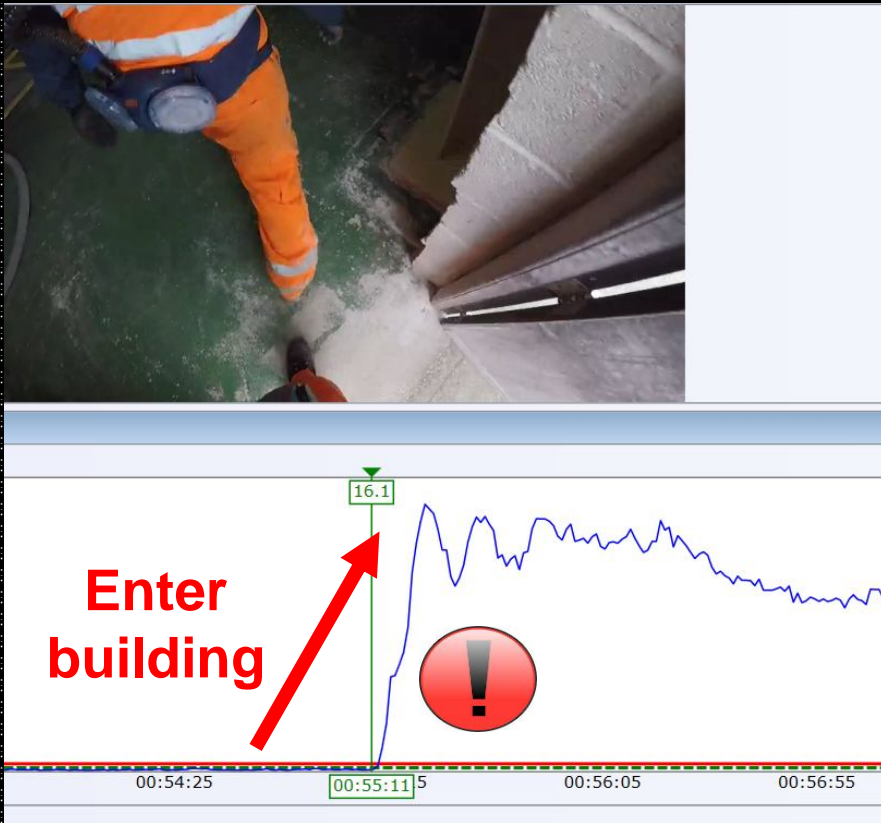
Why Real Time Fixed Detector?

✓ **Worker Health**

✓ **Production efficiency**

✓ **Equipment lifespan**

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How it works?

✓ **Alerts when abnormal levels are detected**

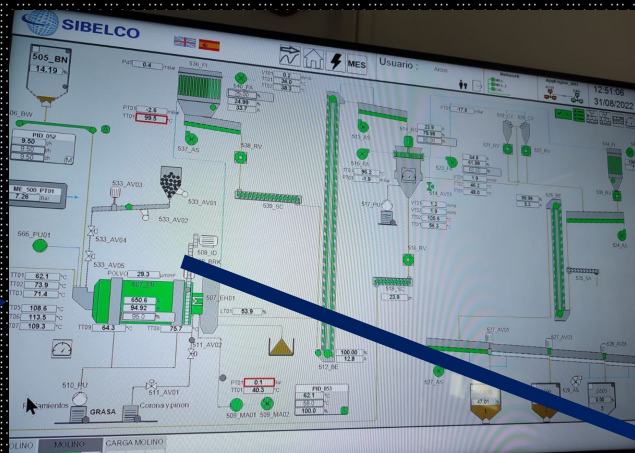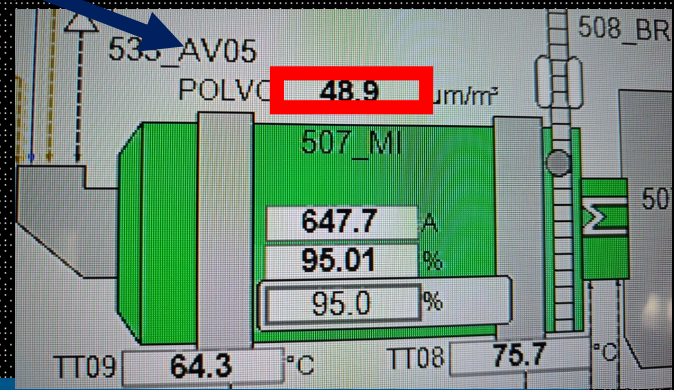✓ **and this protects employees and process**

Dust detection in Scada (visual alarms in control rooms)

The operator can see what the dust levels are in the different points of the plant

Dust peaks every time the operator takes a sample

Improvement opportunity: Automatic sampling

safe habits *save lives*

Dust detector are connected with visual indicators and exhaust fans

safe habits save lives

GET TO ZERO

Open wall structure   Structure with walls

In close buildings dust in spread through all floors, less detectors are needed

Exhaust fans

Wall louver

Open door

Air intake
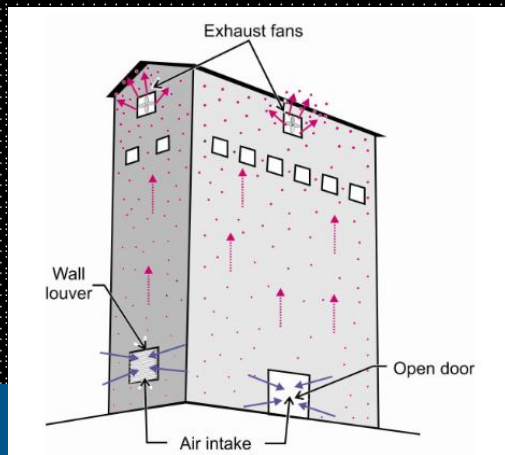
Installation of more detectors to identify faster where the dust leak has occurred

THANK YOU

Any questions?