KONGSKILDE

INNOVATIVE PNEUMATIC SOLUTIONS

FOR THE PRINTING INDUSTRY

PRESENTED BY

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KONGSKILDE INDUSTRIES A/S

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ABOUT ME

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Area Sales Manager

Kongskilde Industries

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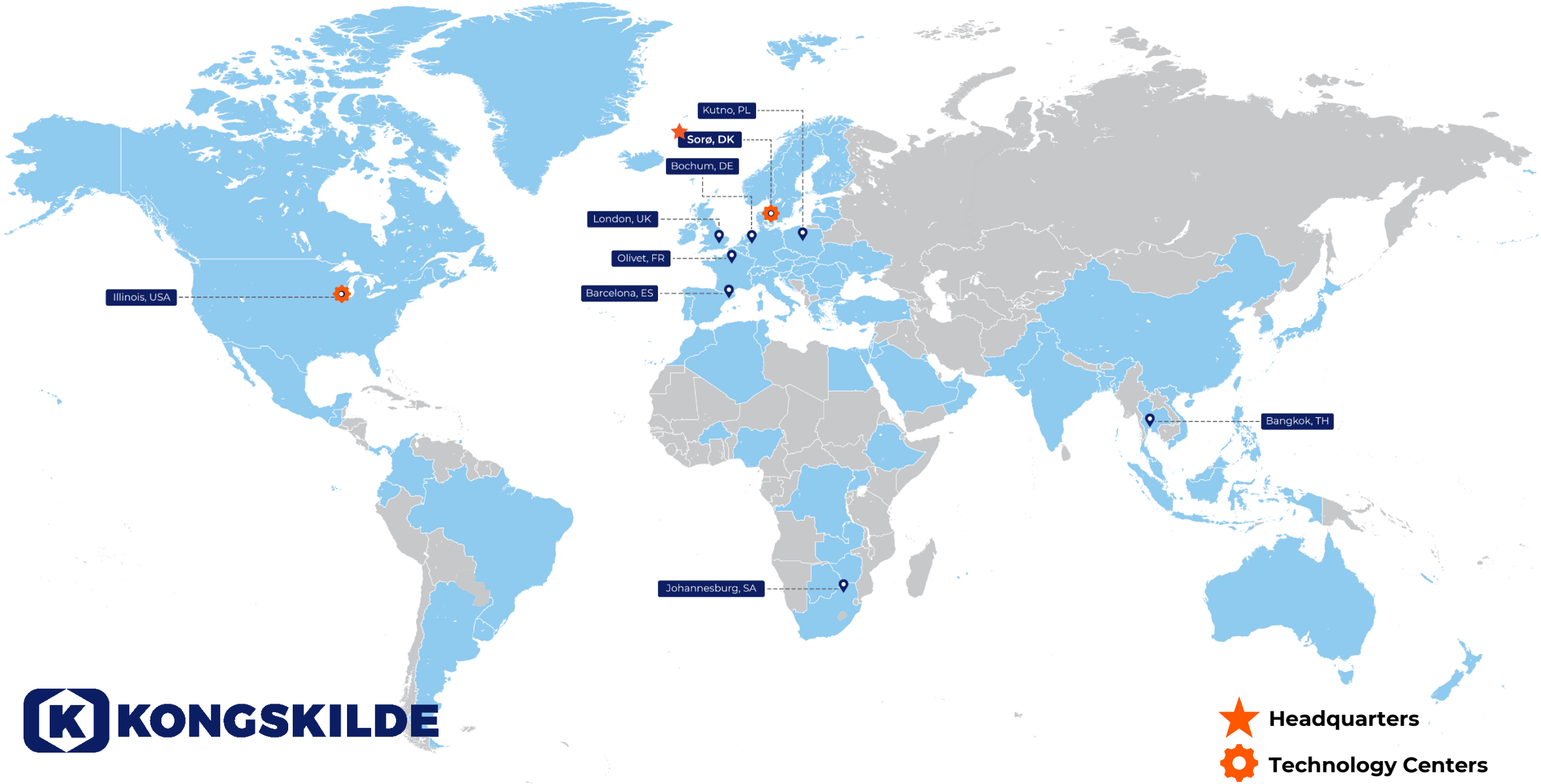
SALES OFFICES AROUND THE WORLD



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75+ YEARS OF EXPERIENCE IN PNEUMATIC SOLUTIONS

Since 1949, we've been driven by a strong commitment to harness the power of air to develop customized solutions that enhance efficiency, streamline operations, and elevate performance in industrial manufacturing.

We specialize in innovative pneumatic solutions for conveying, separating, and handling trim, dust, and process waste in the printing and paper industry.

With a focus on efficiency and reliability, Kongskilde helps businesses optimize operations, reduce waste, and improve workplace cleanliness—driving success in modern printing and paper production.

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More than 30.000 m² production facility in Sorø, Denmark

OVERVIEW

- ✓ Industry Challenges
- ✓ What is Pneumatic Conveying?
- ✓ Our Approach
- ✓ Our Solutions
- ✓ Case Studies

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INDUSTRY CHALLENGES

Current Challenges in Printing

- Energy efficient handling, storage, and disposal of off-cuts, trims, and waste
- Maintaining efficiency in high-speed production
- Workplace cleanliness and safety concerns

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INDUSTRY CHALLENGES

How Kongskilde Solves These Challenges

- ✓ Efficient trim extraction and waste handling
- ✓ Flexible, modular systems for easy integration
- ✓ Enclosed conveying solutions
- ✓ In-process recycling solutions
- ✓ Turn-key waste management solutions Integrated multidisciplinary systems tailored to your production process that ensure:
  - ✓ Shredding for particle size adjustment
  - ✓ Compaction (baling, briquetting, press containers)
  - ✓ Air purification and recirculation
  - ✓ Seamless integration with process controls

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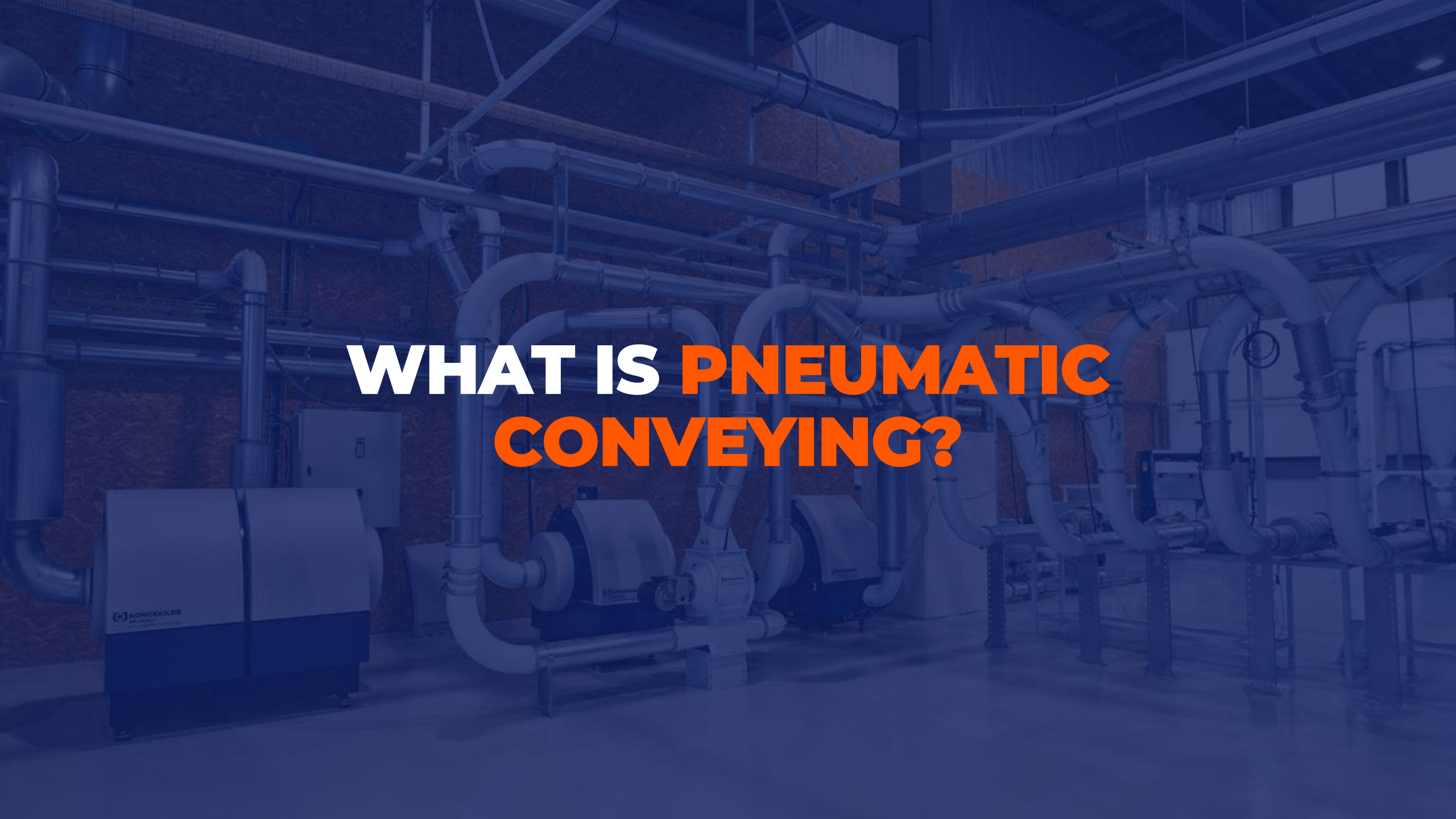

WHAT IS PNEUMATIC CONVEYING?


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WHAT IS PNEUMATIC CONVEYING?

Concept:

Pneumatic conveying is a highly efficient method of transporting **materials using airflow**, eliminating the need for mechanical conveyors. By utilizing controlled air pressure or vacuum systems, materials in the form of **edge trim, off-cuts, matrix, and dust** can be efficiently moved **through piping** with **no manual handling.**

How it Works:

1. **Pickup** – Material, trim waste, or dust is collected at the source.
2. **Transport** – A powerful blower generates airflow, carrying the material through the pipes to a separator and finally to the collection system.
3. **Separation & Collection** – Materials are separated from the air stream and directed into a compactor, baler, or recycling system.

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WHAT IS PNEUMATIC CONVEYING?

For Printing:

- ✓ **Continuous Trim Extraction** – Removes edge trims instantly from presses, slitters, and rewinders, preventing slowdowns.
- ✓ **Efficient Waste Handling** – Manages paper, coated materials, and plastic film waste with seamless transport to collection or recycling.
- ✓ **Enhanced Print Quality & Machine Efficiency** – Keeps production clean, reducing downtime and maintaining consistent print quality.
- ✓ **Adaptable to Any Setup** – Handles varying trim widths, integrating smoothly with existing systems.

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OUR APPROACH

OUR APPROACH

At Kongskilde, we combine **decades of pneumatic expertise** with a customer-focused approach to deliver **efficient, customized solutions** for the printing and paper industry.

- ✓ **Turn-Key Solutions** – From design to installation, we provide complete systems tailored to your production needs.
- ✓ **Customized Engineering** – Our team develops solutions that adapt to your specific trim extraction and material handling challenges.
- ✓ **Industry Experts** – With specialized knowledge in pneumatic conveying, our engineers and sales teams work closely to optimize efficiency and reliability.
- ✓ **Problem-Solving Partnership** – We collaborate with customers to analyze needs, provide on-site assessments, and ensure seamless system integration.

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INDUSTRIES WE SERVE

Printing Houses

Paper Production

Book Binding

Corrugated Paper

Flexible Packaging

Tissue Production

Label Production

Paper Cup Production

Paper Roll Converting

Film Production

Carton Box Production

Plastic Production

Recycling

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OUR SOLUTIONS

TRIM & WASTE HANDLING SOLUTIONS

MultiAir Blowers - High-efficiency, low-noise blowers that provide consistent airflow for pneumatic conveying and waste extraction.

Transport & Chopper fans - Powerful fans that convey and chop trim waste, optimizing material transport and reducing energy consumption.

RVS / KS Separators - Efficient separators that remove trim and dust from the conveying air, ensuring clean and reliable waste handling.

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INLINE DOWNSIZING SOLUTIONS

MC Cutters – High-speed inline cutters designed to process continuous trim waste efficiently for easy transport and collection.

MCB MultiCutter – A compact, noise-reducing cutter that ensures precise and efficient cutting of continuous and endless trims.

KG Inline Granulator – A robust granulator that converts plastic and film waste into reusable granules for recycling or reprocessing.

MultiDicer – A heavy-duty dicing system that reduces large paper, cardboard, or plastic waste into manageable pieces for disposal or recycling.

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COMPACT COLLECTION & WASTE EXTRACTION

CUB (Compact Unit with Bag) – A space-saving, mobile trim extraction unit that collects and contains waste in a bag for easy disposal.

CUC (Compact Unit with Compactor) – An efficient trim extraction system that compacts waste, reducing volume and optimizing handling and disposal.

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CASE STUDIES

CASE #1

OFF-CUTS, MATRIX, EDGE TRIM HANDLING WITH BRIQUETTING & REINTRODUCTION OF PURIFIED CONVEYING AIR

THE CHALLENGE

The customer in Croatia sought to improve energy efficiency by replacing four separate sub-systems, powered by individual blowers (between 35–50 kW each). With the addition of four new die-cutters that **doubled production capacity**, the existing setup proved inadequate for handling the new waste matrices.

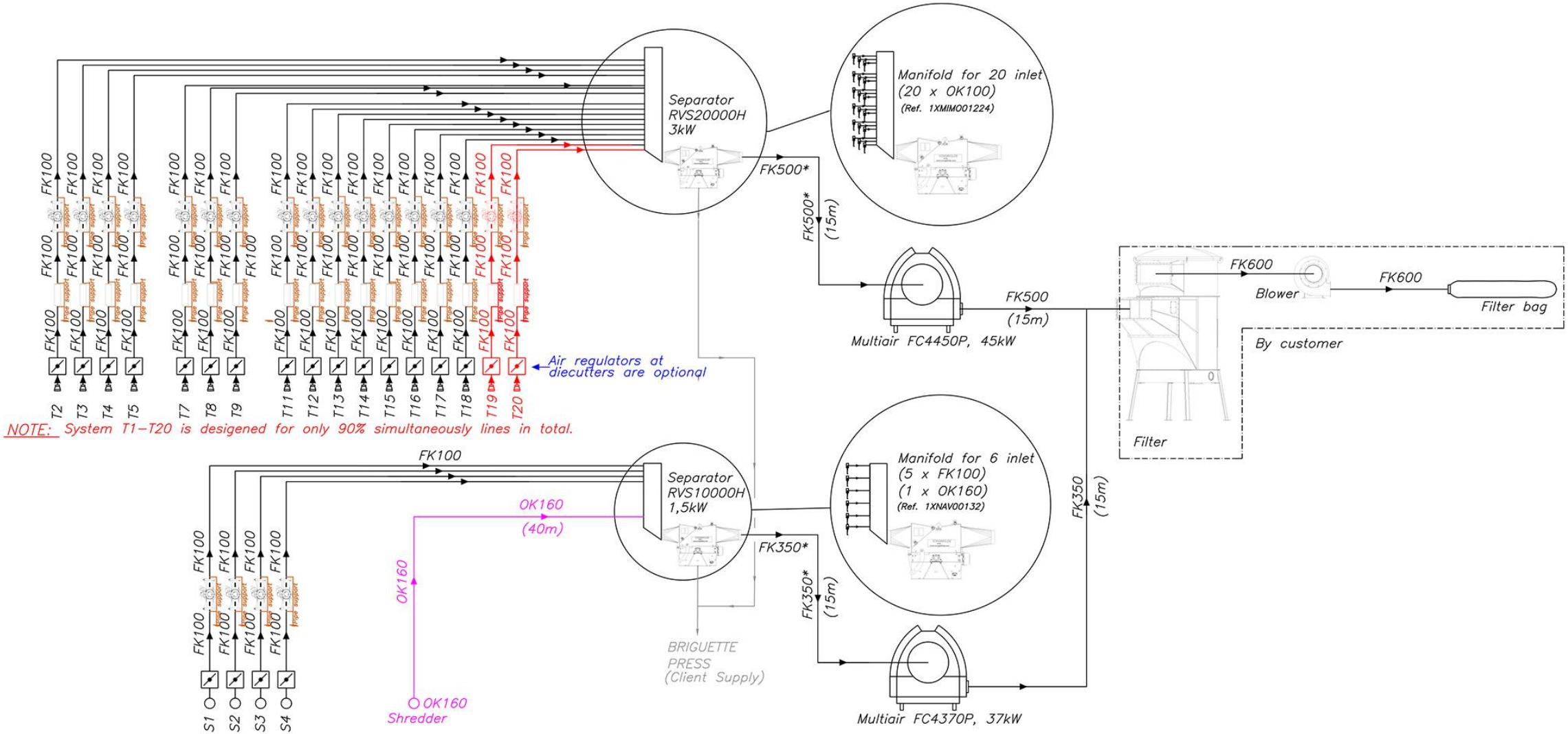
THE SOLUTION

Kongskilde collaborated in the development of the new production process, contributing to the design and optimization of the production layout. The implemented solution includes:

- Approximately 1,600 meters of Ø100 mm papaline piping and 70 meters of Ø160 mm piping
- 25 in-line cutters
- 2 Multiair 4000 series high-pressure conveying blowers
- 2 rotary separators (RVS) mounted on a service platform
- 1 briquetting press
- 1 filtration unit with a capacity of 20,000 m^3/h
- A central control panel enabling automatic system adjustments based on the number of machines operating

The system handles:

- Matrix waste from 20 die-cutting machines
- Continuous edge trim from 5 slitters
- Shredded scrap from a single shredder


Separator
RVS20000H
3kW
Manifold for 20 inlet
(20 x OK100)
(Ref. 1XMIMO01224)
FK500*
FK500*
(15m)
Multiair FC4450P, 45kW
FK500
(15m)
FK600
Blower
FK600
Filter bag
By customer
Filter
Air regulators at
diecutters are optional
NOTE: System T1–T20 is desigened for only 90% simultaneously lines in total.
FK100
Separator
RVS10000H
1,5kW
OK160
(40m)
OK160
OK160
Shredder
BRIGUETTE
PRESS
(Client Supply)
Manifold for 6 inlet
(5 x FK100)
(1 x OK160)
(Ref. 1XNAV00132)
FK350*
FK350*
(15m)
FK350
(15m)
Multiair FC4370P, 37kW
T2
T3
T4
T5
T7
T8
T9
T11
T12
T13
T14
T15
T16
T17
T18
T19
T20
S1
S2
S3
S4

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CASE #1

OFF-CUTS, MATRIX, EDGE TRIM HANDLING WITH BRIQUETTING & REINTRODUCTION OF PURIFIED CONVEYING AIR

THE RESULT

The Kongskilde solution fully replaced the outdated system serving 14 die-cutters and 5 slitters. With the integration of additional machines and a shredder, it delivered:

- ✓ A direct 40% reduction in energy consumption
- ✓ Further energy savings through recirculation of conveying airflow—unlike the old system, which vented it into the environment
- ✓ Higher waste material value, as dense briquettes significantly reduce loss during melting compared to baled material
- ✓ Fully automated operation, requiring only routine replacement of big bags at the briquetting press—eliminating the need for a dedicated waste-handling operator

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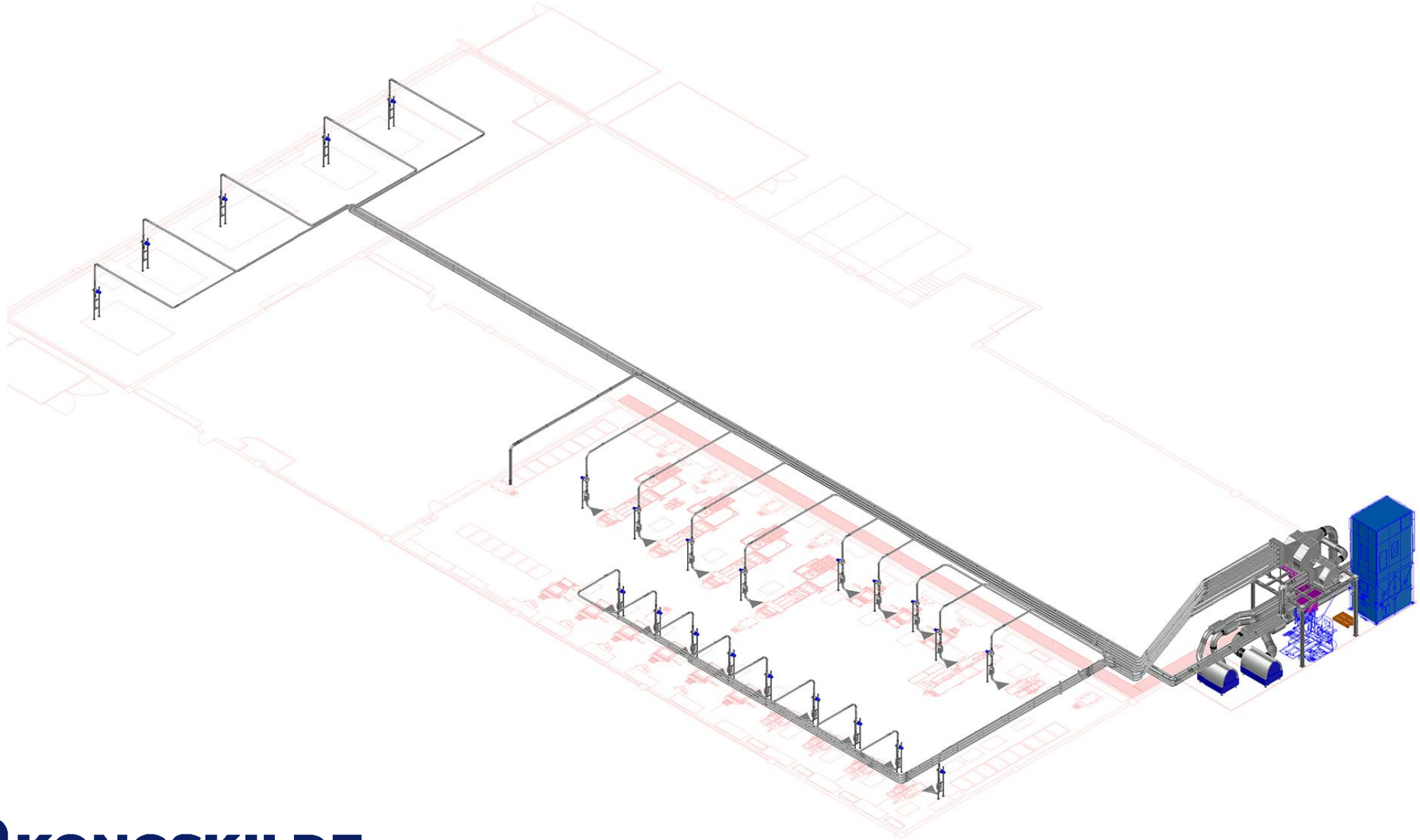

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CASE #2

TRIM EXTRACTION SYSTEM FOR BOOK PRODUCTION MINIMIZES DOWNTIME AND RECOVERY OF WARM AIR

THE CHALLENGE

A major book manufacturer struggled with an outdated trim extraction system that caused downtime, excessive dust, and inefficient waste handling. Trimmings piled up around machines, reducing productivity and preventing the integration of a new production line.

THE SOLUTION

Kongskilde installed a fully automated pneumatic extraction system with high-efficiency fans, a separator, and a filter for continuous trim and dust removal. An intelligent control panel optimized performance, while an automatic waste switch ensured uninterrupted operation. The system's compact design freed up floor space and improved waste handling efficiency.

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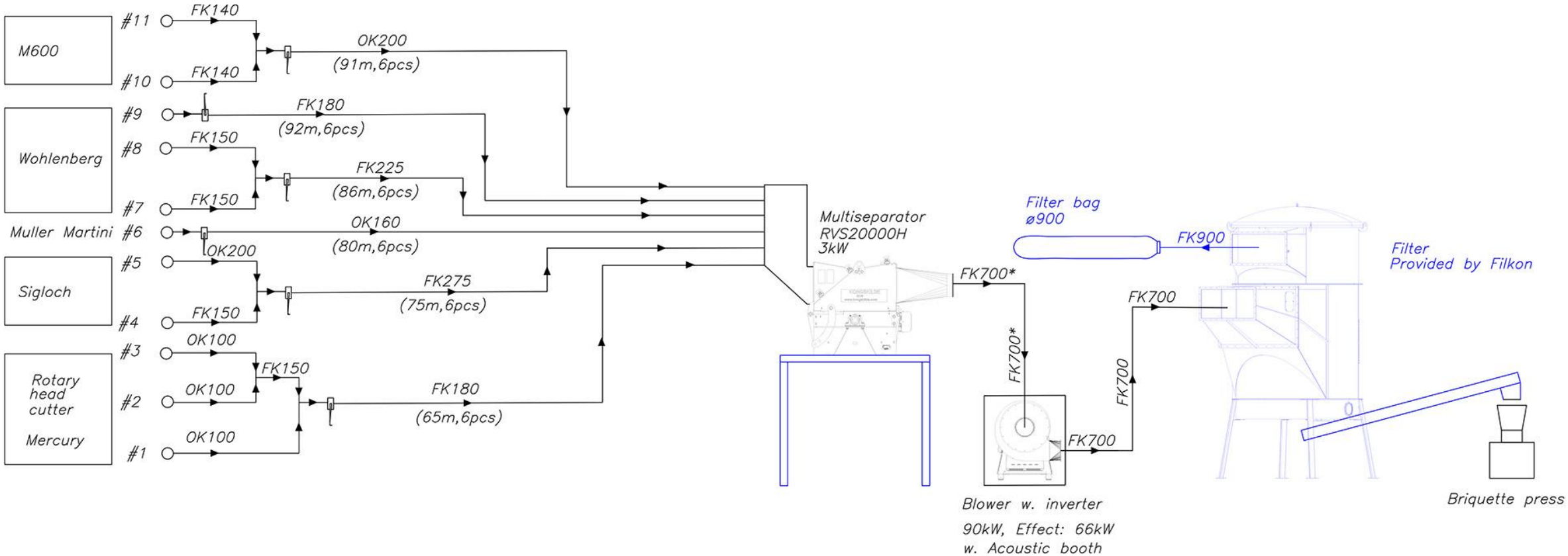
M600
#11
FK140
#10
FK140
OK200
(91m,6pcs)
Wohlenberg
#9
FK180
(92m,6pcs)
#8
FK150
FK225
(86m,6pcs)
#7
FK150
Muller Martini
#6
OK160
(80m,6pcs)
Sigloch
#5
OK200
FK275
(75m,6pcs)
#4
FK150
Rotary head cutter
Mercury
#3
OK100
FK150
#2
OK100
FK180
(65m,6pcs)
#1
OK100
Multiseparator
RVS20000H
3kW
FK700*
FK700*
Filter bag
ø900
FK900
FK700
FK700
FK700
Filter
Provided by Filkon
Blower w. inverter
90kW, Effect: 66kW
w. Acoustic booth
Briquette press

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CASE #2

TRIM EXTRACTION SYSTEM FOR BOOK PRODUCTION MINIMIZES DOWNTIME AND RECOVERY OF WARM AIR

THE RESULT

The modernized trim extraction system:

- ✓ Significantly reduced energy consumption
- ✓ Eliminated downtime
- ✓ Improved cleanliness
- ✓ Optimized workflow

Cleaner air reduced heating costs, and automated waste handling cut labor expenses. The factory now operates efficiently with seamless, high-speed waste removal and a cleaner, more productive environment.

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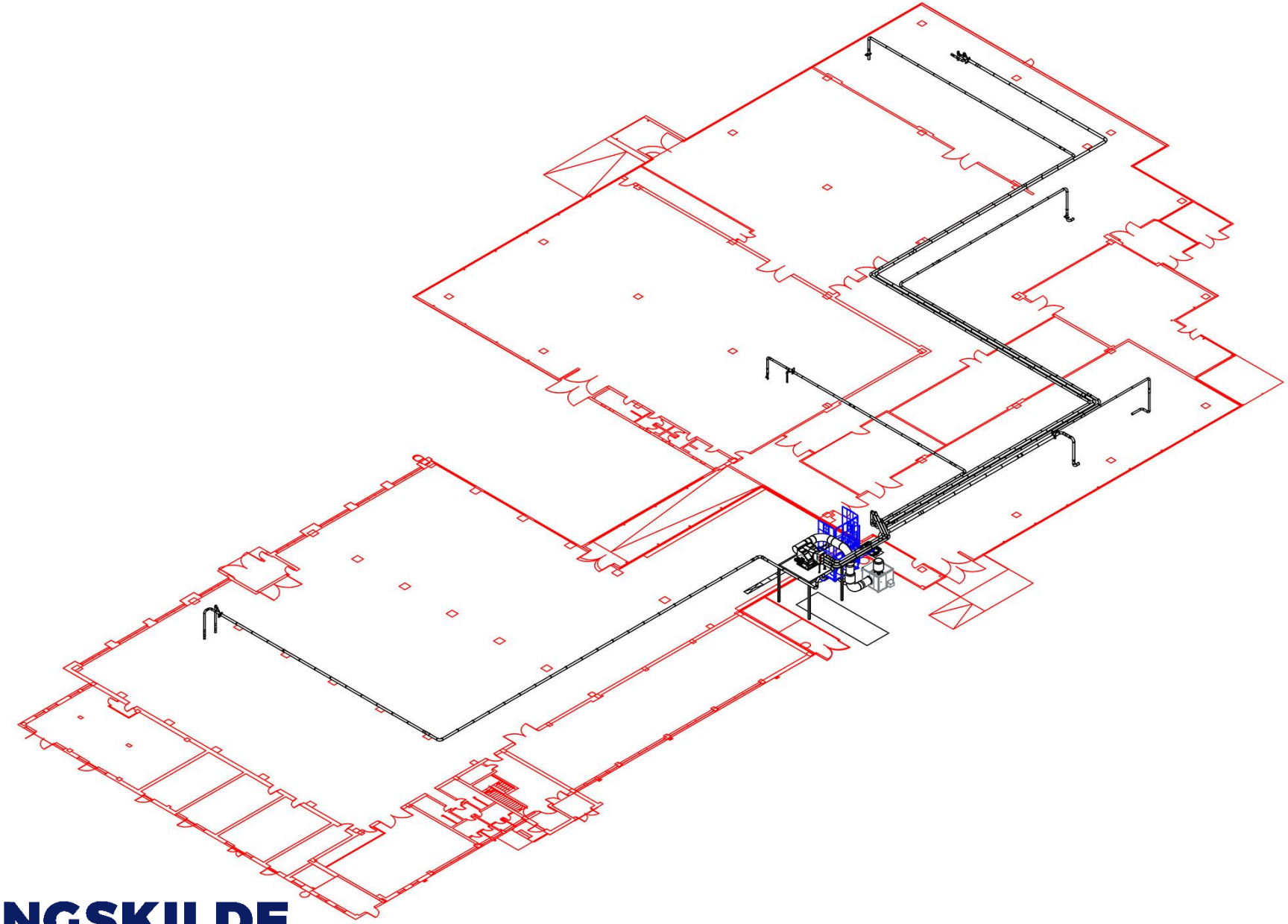

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CASE #3

TRIM AND SHREDDED FILM WASTE HANDLING SYSTEM FOR FLEX-PACK PRODUCTION ENABLES WASTE SEPARATION AND MAJOR IMPROVEMENT IN ENERGY EFFICIENCY

THE CHALLENGE

The largest Slovenian producer of flexible packaging currently handles waste through smaller localized systems and relies heavily on manual labor. Our engineers were tasked with improving energy efficiency, automating and centralizing the waste management process, and implementing material-specific separation to enable efficient collection of recyclable waste.

THE SOLUTION

Kongskilde installed a fully automated pneumatic extraction system featuring high-efficiency fans, RVS separators, and a dust filter to handle film trims, scrap, and residue. An intelligent control panel optimizes performance, while automatic waste switches ensure continuous operation. The compact design frees up floor space and enhances waste handling efficiency.

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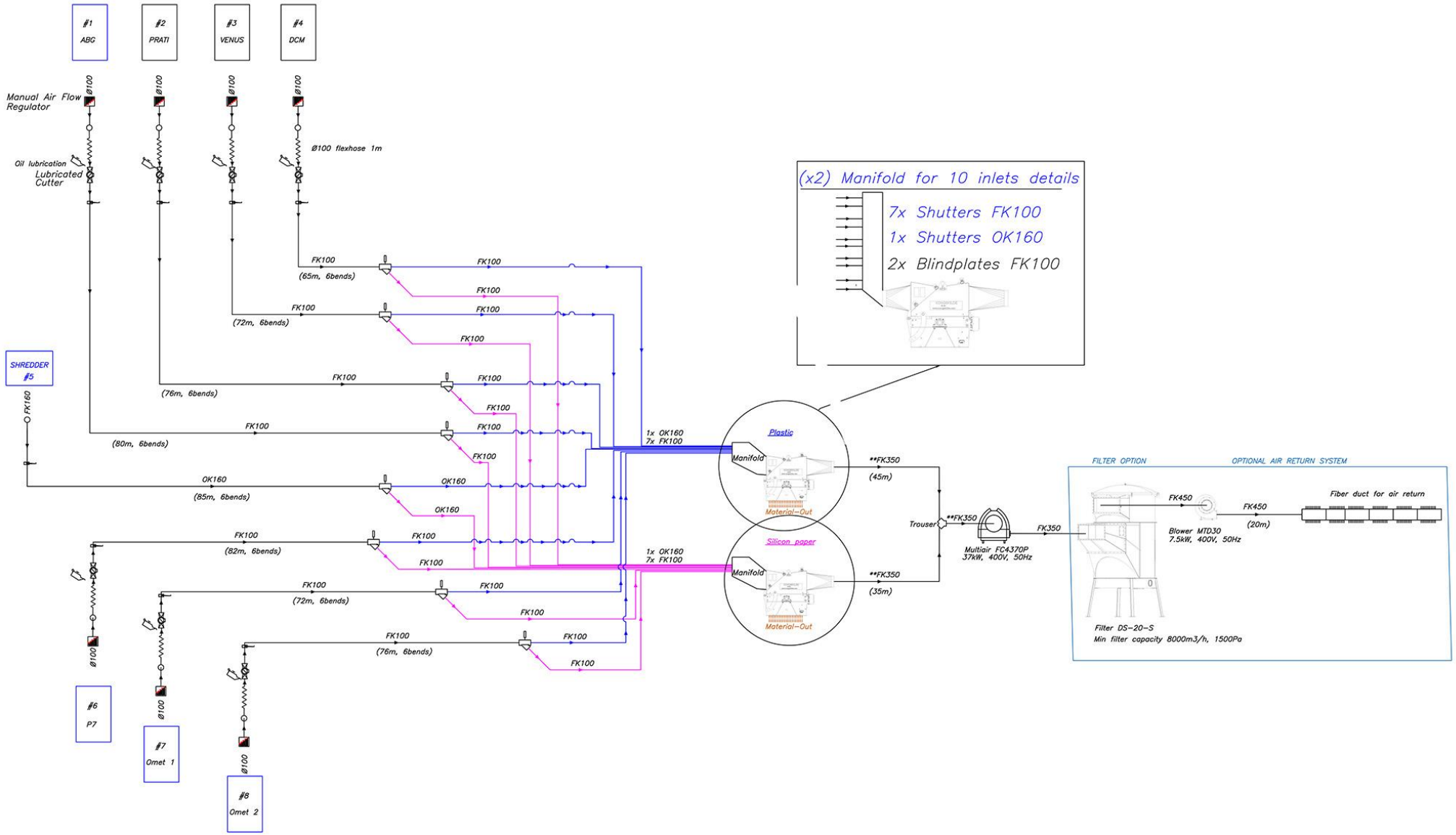
#1
ABG
#2
PRATI
#3
VENUS
#4
DCM
Manual Air Flow Regulator
Ø100
Oil lubrication
Lubricated Cutter
Ø100 flexhose 1m
FK100
(65m, 6bends)
(72m, 6bends)
(76m, 6bends)
(80m, 6bends)
SHREDDER #5
FK160
OK160
(85m, 6bends)
(82m, 6bends)
(72m, 6bends)
(76m, 6bends)
#6
P7
#7
Omet 1
#8
Omet 2
(x2) Manifold for 10 inlets details
7x Shutters FK100
1x Shutters OK160
2x Blindplates FK100
1x OK160
7x FK100
Plastic
Manifold
Material-Out
Silicon paper
**FK350
(45m)
(35m)
Trouser
Multiair FC4370P
37kW, 400V, 50Hz
FK350
FILTER OPTION
OPTIONAL AIR RETURN SYSTEM
FK450
(20m)
Fiber duct for air return
Blower MTD30
7.5kW, 400V, 50Hz
Filter DS-20-S
Min filter capacity 8000m3/h, 1500Pa

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CASE #3

TRIM AND SHREDDED FILM WASTE HANDLING SYSTEM FOR FLEX-PACK PRODUCTION ENABLES WASTE SEPARATION AND MAJOR IMPROVEMENT IN ENERGY EFFICIENCY

THE RESULT

The upgraded waste handling system eliminates downtime, enhances cleanliness, streamlines workflow, and significantly boosts energy efficiency. By recirculating clean air, the system reduces heating and cooling costs, while automation minimizes labor expenses. The factory now runs more efficiently, with seamless high-speed waste removal and a cleaner, more productive environment.

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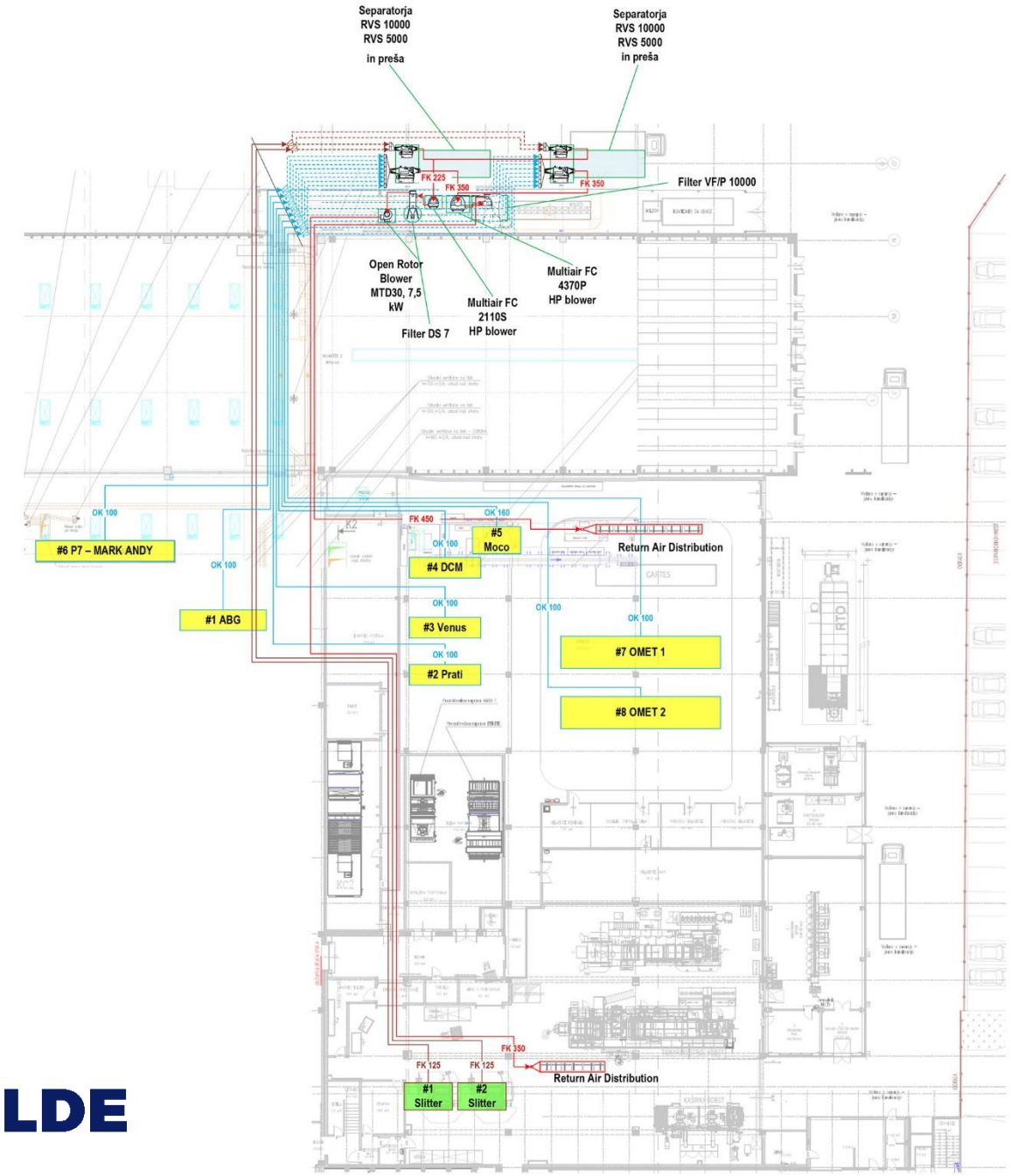
Separatorja
RVS 10000
RVS 5000
in preša
Separatorja
RVS 10000
RVS 5000
in preša
FK 225
FK 350
FK 350
Filter VF/P 10000
Open Rotor
Blower
MTD30, 7,5
kW
Filter DS 7
Multiair FC
2110S
HP blower
Multiair FC
4370P
HP blower
OK 100
#6 P7 – MARK ANDY
OK 100
#1 ABG
FK 450
OK 160
OK 100
#5
Moco
#4 DCM
Return Air Distribution
OK 100
#3 Venus
OK 100
#2 Prati
OK 100
OK 100
#7 OMET 1
#8 OMET 2
FK 350
FK 125
FK 125
#1
Slitter
#2
Slitter
Return Air Distribution

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Q&A

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THANK YOU

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