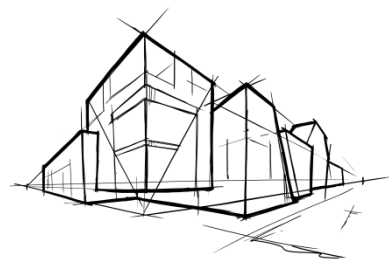




Integreret Automation i ROCKWOOL

DAu konference
September 2018



Agenda

1

ROCKWOOL/Baggrund

2

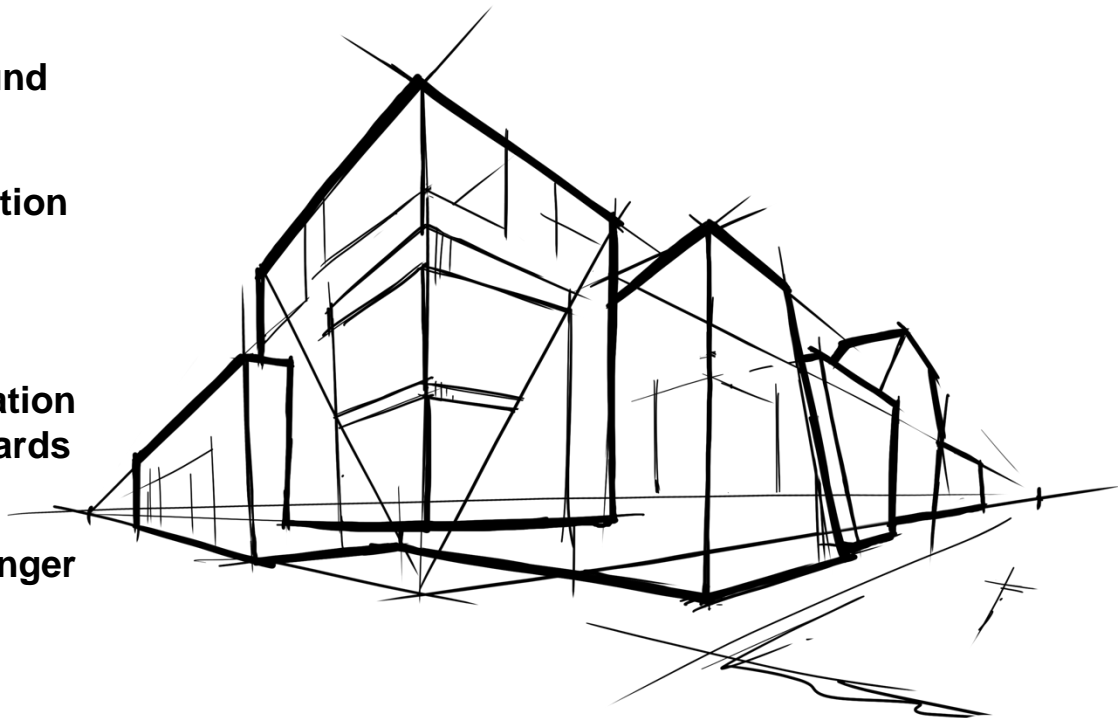
ROCKWOOL Production
setup

3

ROCKWOOL Automation
and Electrical Standards

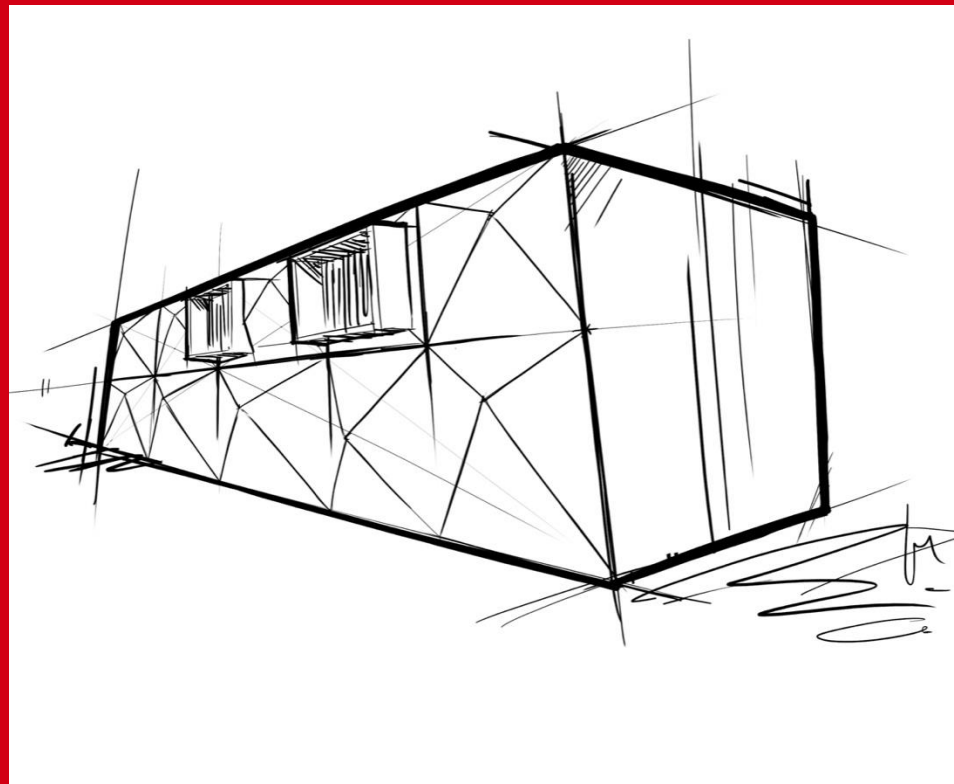
4

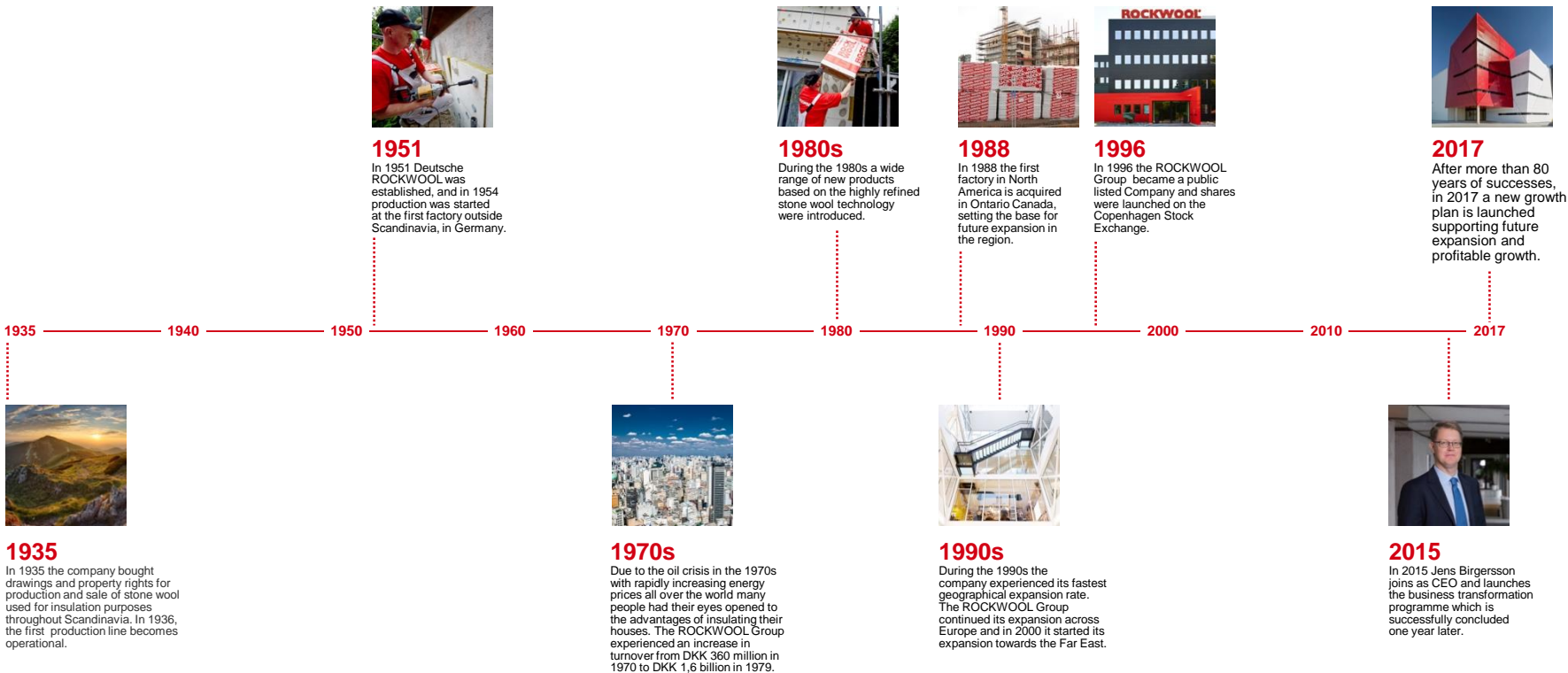
Konklusion/Anbefalinger



1

ROCKWOOL Baggrund







Technical insulation
solutions for process
industry, marine and
offshore

- Reduces heat loss and CO₂ emissions for industrial insulation
- It has a positive carbon footprint



Firesafe insulation
for all types of
buildings including
ROCKWOOL wall
systems

- 97% of stone wool can be recycled after use
- It does not burn or emit high levels of toxic smoke in a fire
- Provides firefighters critical extra time to save lives by slowing the spread of fire
- Durable and resilient
- Easy to fit and retrofit
- It has a positive carbon footprint



Core solutions
Customised stone
wool solutions to
industrial partners

- It does not burn or emit high levels of toxic smoke in a fire
- Makes air-conditioning less noisy



Special fibres for e.g. automotive brakes

- Securing your vehicle can come to a stop
- Fully sustainable products throughout their life



Precision growing for the horticultural industry

- Support sustainable production of fresh and healthy vegetables
- Multiplies yields and saves water



Exterior cladding for buildings

- Durable and resilient
- Easy to fit and retrofit



Acoustic ceiling and wall solutions

- Reduces noise and echoes
- Creates a comfortable indoor climate

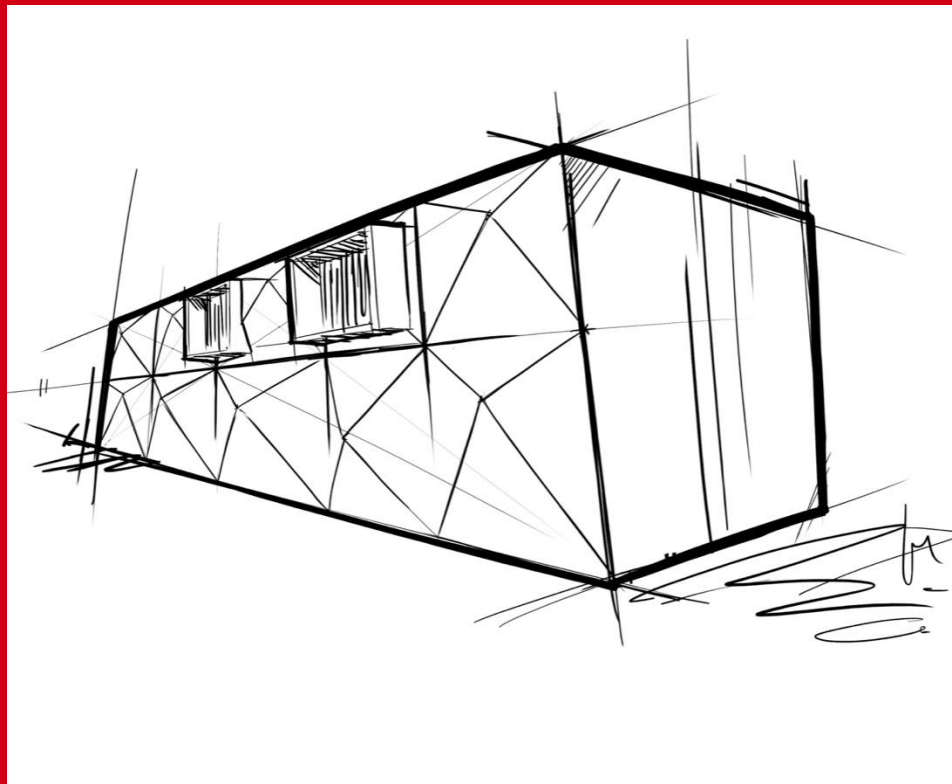
We create sustainable solutions to protect life, assets, and the environment today and tomorrow.

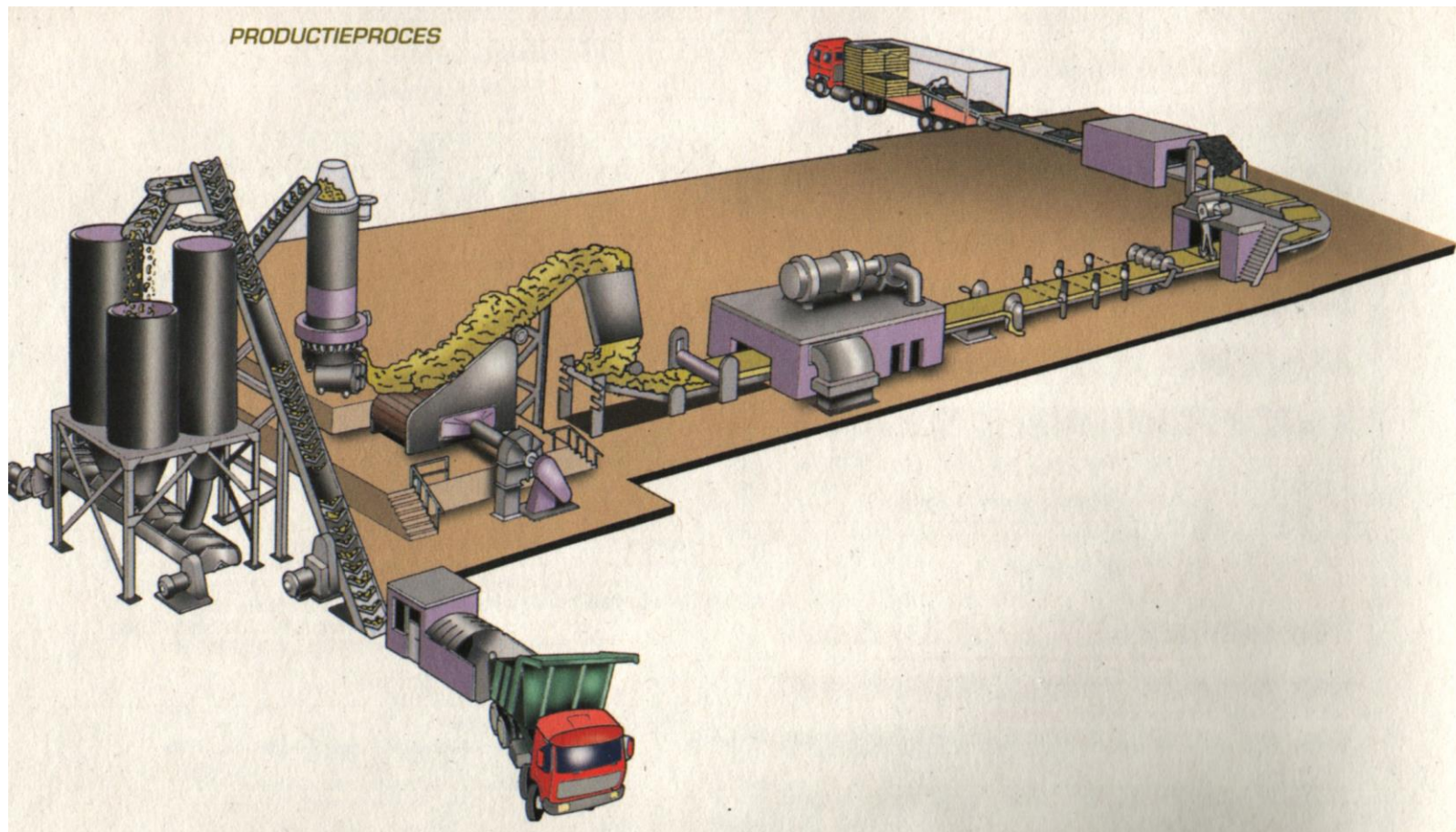


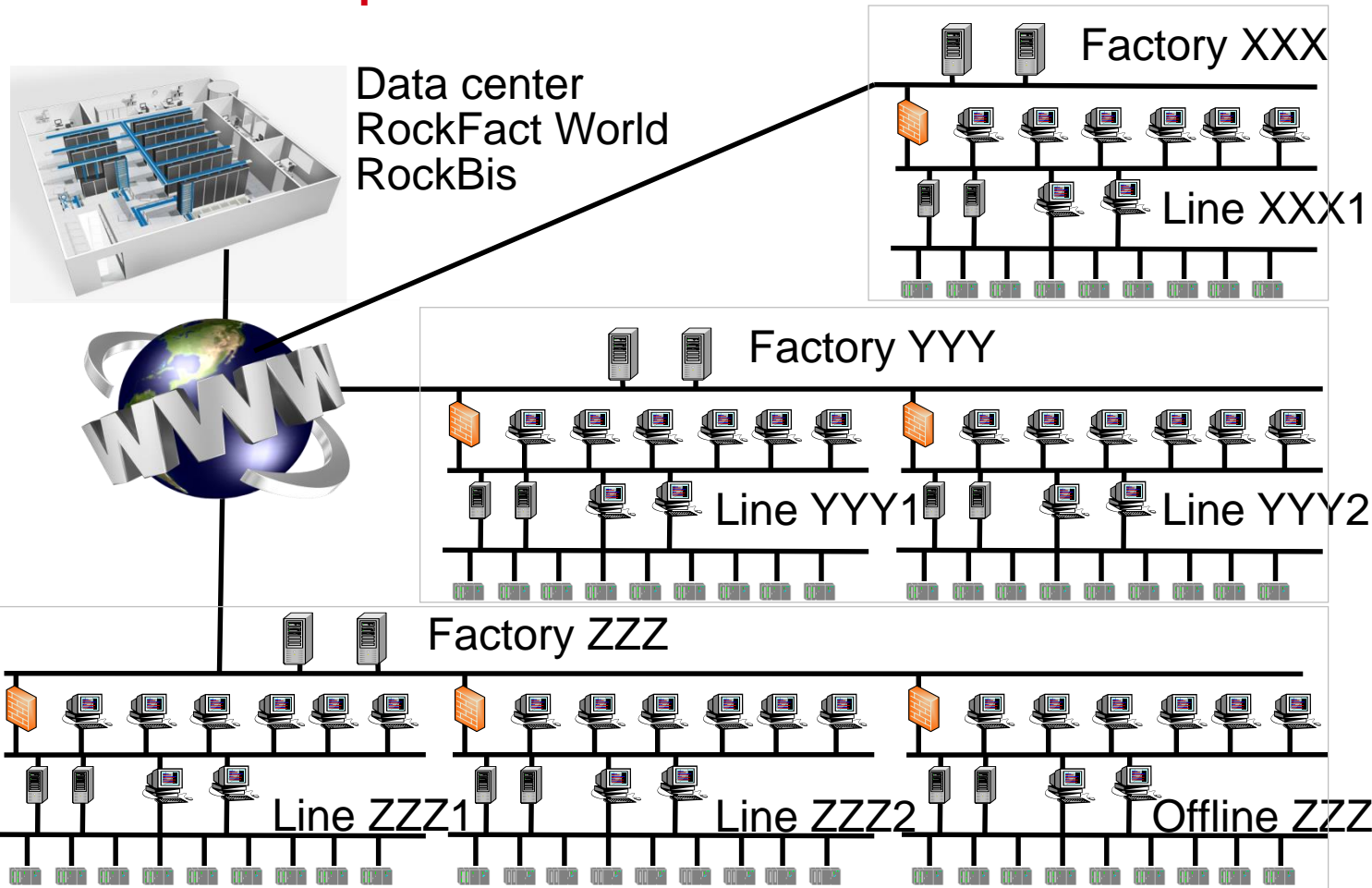
● Manufacturing facilities
● Sales offices

2

ROCKWOOL Production Setup

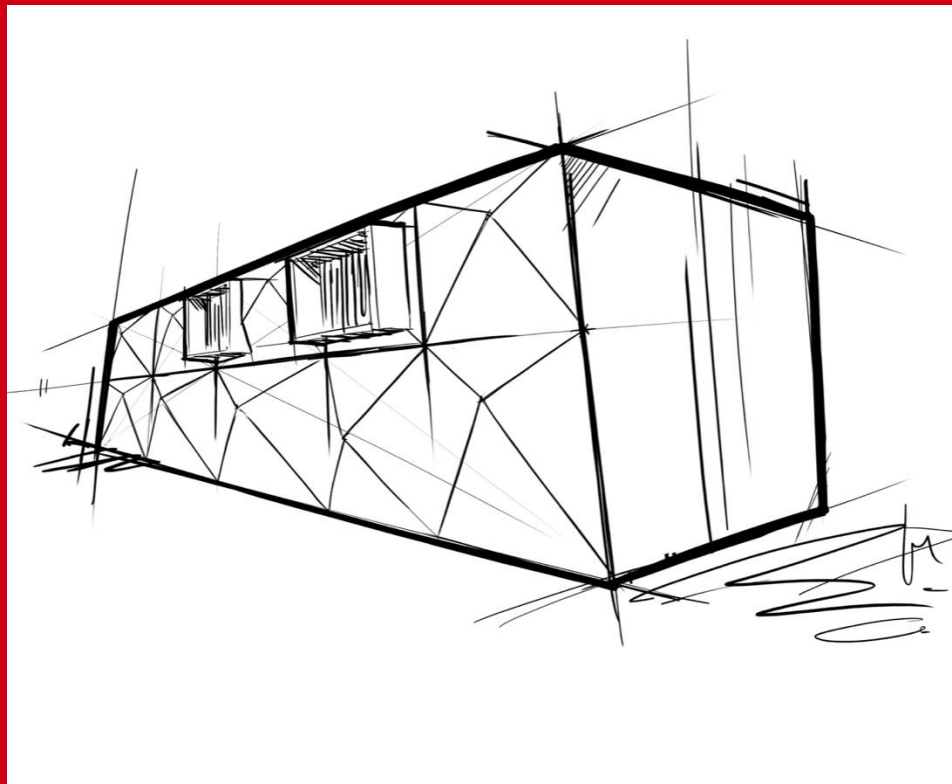






3

ROCKWOOL Automation and Electrical Standards



El Hardware

- Komponentvalg
- Tavleopbygning
- Design: El-CAD/EPlan

Komponentnummering/Navngivning

- TAG numerering

PLC:

- Siemens S7 (S5, Pilz)

SCADA:

- Siemens WinCC
- Lokal paneler % - Nu TIA

Drev:

- Frekv. Omf./ Servo Drives

OT Infrastructure

- Netværksdesign
- BackUp
- Access control
- Remote Access

Andre Standarder

- AutoCAD/Inventor
- Projektafvikling/Styring (Stage Gate)
- CE-Mærkning/Dokumentation
- Arkivering

Udviklet til S5 og COROS 2000

1986

Benyttet 1. gang i Frankrig 1988

Kører stadig, men er opgraderet til WinCC og delvist til S7

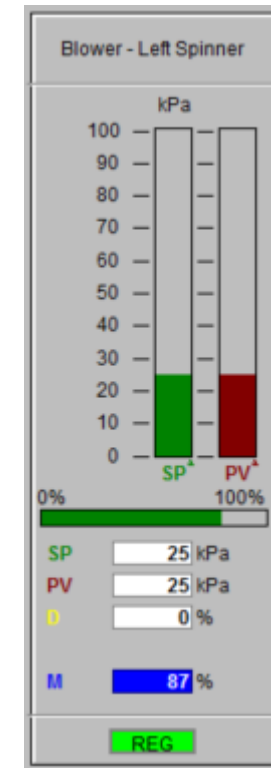
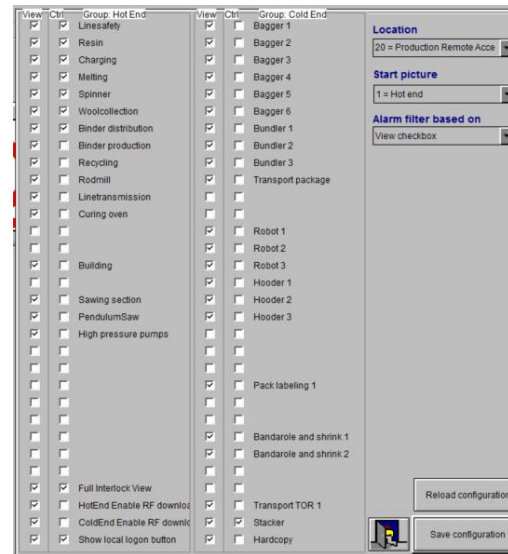
Mål:

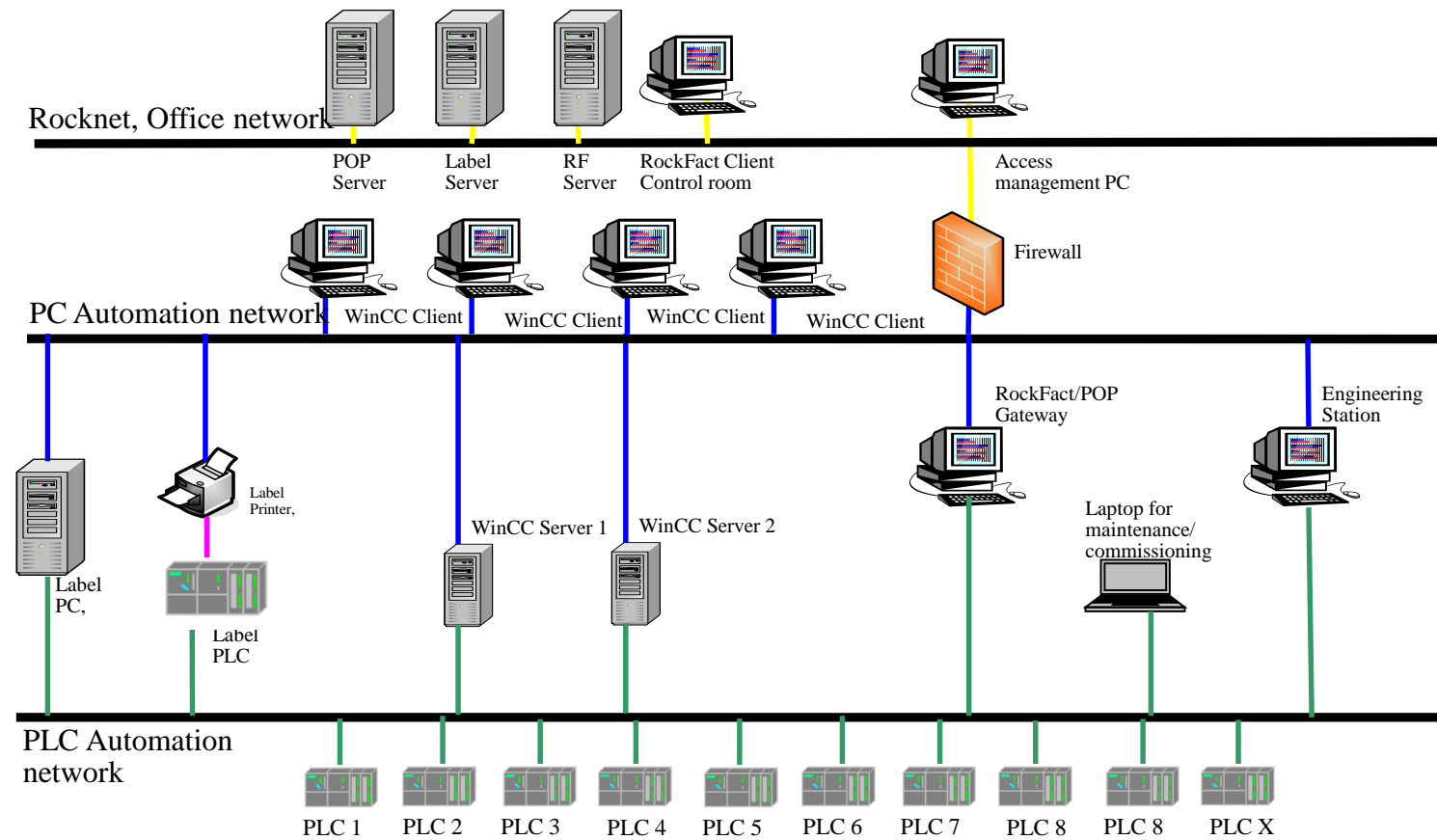
At reducere SW-udvikling til "ren parametring" – Så vidt muligt ;-)

Forenklet dokumentation/Guidelines

Generel operatør Manual til beskrivelse af gentagne funktioner:

Navigering, Komponenter, Sektioner, Kurvebilleder, Kontrollere, Modes, Service billeder o.s.v.





- Komponenter / Sektioner
 - Opbygning FC'er og Netværk
- Kommunikation
- Visualisering (på WinCC)
- Alarmhåndtering
- MES Integration
- Tools
 - RW_Project_Setup

The screenshot displays the SIMATIC Manager interface with two windows open:

Top Window: SIMATIC Manager - [FSc_Test -- D:\RW_STEP7\FSc_Test]

Object name	Symbolic name	Comment	Name (Header)	Type	Author
FC550	FC 550	Communication to S7 PLC station 20		Function	
FC551	FC 551	Communication to S7 PLC station 21		Function	

Bottom Window: LAD/STL/FBD [FC601 - FSc_Test\ST_6_MA_Master\CPU 414-3 DP]

This window shows a ladder logic diagram with a component table on the right:

Symbolic Name	Component Name
"M 001.1"	EN
W#16#0	OPTION
"DB228".CO MHAND_DEMO 04	CUR_CORMA
"M 001.1"	ENABLE_CO
"M 199.0"	TIME_TRIG
20	TIME_FUN
0	TIME_ENDS
0	TIME_STOP
10	TIME_REVE
"M 021.0"	ALARM_ACK
"I 002.0"	PEA_ISOLA
"I 002.1"	PEA_PROTE
"I 002.2"	PEA_SPARE
"M 001.1"	PEA_SPARE
"M 601.3"	INTERLOC_
"I 005.5"	INTERLOCK
"M 600.1"	INTERLOC_
"M 600.0"	GRO_STAR_

The ladder logic diagram shows several rungs with logic involving these components. For example, rung 1 has a normally open contact for "M 601.3" followed by a normally open contact for "M 603.3", leading to a coil for "M 001.1". Rung 2 has a normally open contact for "I 005.5" leading to a coil for "M 001.1". Rung 3 has a normally open contact for "M 600.1" leading to a coil for "M 001.1".

- Billedstruktur, menuer
- Kommandoer, Setpunkter
- Status (farver, blink o.s.v)
- Alarmhåndtering
- Scripting (Master =MA)
 - Templates
- Kurvebilleder, Regulatorer (Parametrering)

Tools:

PowerTools

TAG generering,

Oversættelser

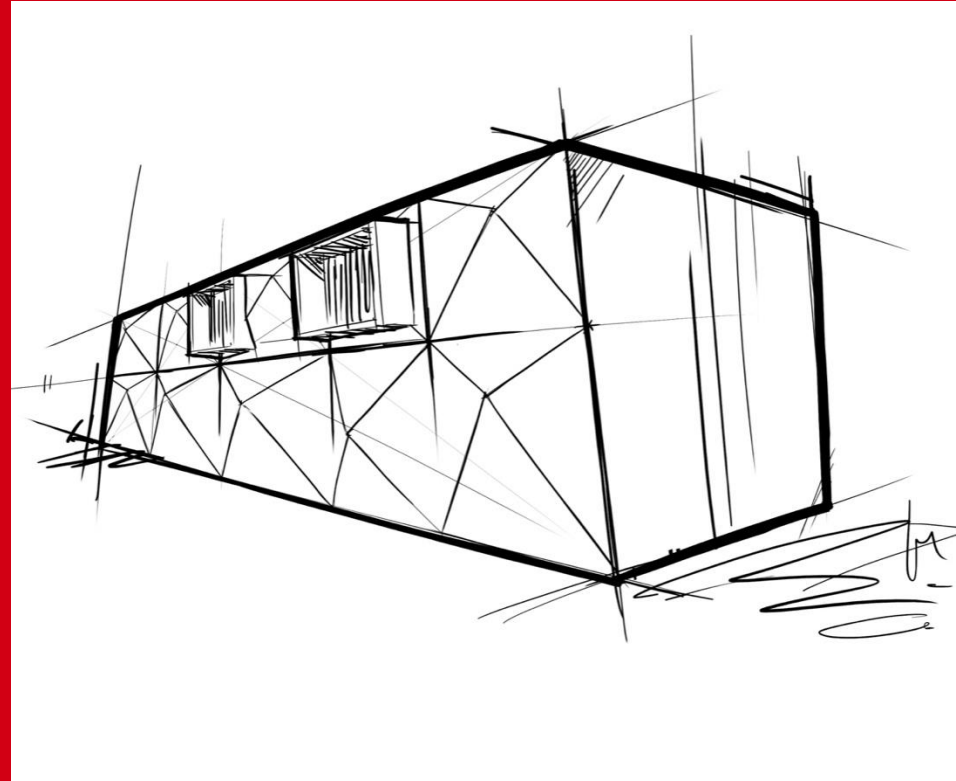
O.S.V.

Scripts

	Mixing A	Mixing B
Set point next produkt	0	0
Set point actual produkt	0	0
Process value	0	0
Deviation	0	0

4

Konklusion/ Anbefalinger



Vil løsningen se anderledes ud hvis vi skulle vælge I dag?

PLC :

Ja – sandsynligvis/delvist

Optimeret til gammelt Hardware

Bagud-kompabilitet koster

WinCC:

Ikke nødvendigvis

Løbende forbedringer/udvikling

Større brug af integrerede funktioner

Grundprincip/Arkitektur: Nej sandsynligvis ikke

Løbende opdateret / Best Practice

Alle kan rette i alles programmer



- Efter indkøring
- Ved ressourseskift

Reducerer Engineering tiden væsentligt



”Genkendelsens glæde” for operatører



- Skyggehold

Kræver oplæring



Kræver løbende/”Tvungen” opdatering



Skal være veldokumenteret



Bundet til leverandør



Hardware



- Overkill?

Disciplin / Den yngre generation





Spørgsmål?

Tak for nu! 😊

**Flemming Schou
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Rockwool International
Group Technology/
Automation and Electrical standards
Flemming.schou@rockwool.com**

