



GRAINTEC A/S

# HALF OF ALL

## NAVIGATING TOWARDS 2035

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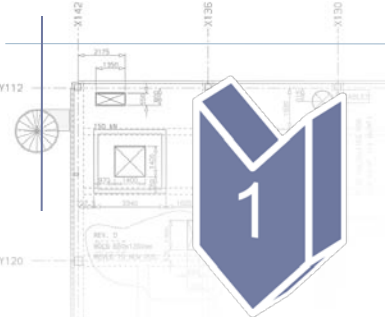


# OUR VISION IS TO REDUCE INVESTMENT, OPERATIONAL AND LOGISTIC COSTS

- 1 • Process, equipment and intelligent instrumentation
- 2 • Logistics and energy
- 3 • Design, engineering and project management



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# PROCESS, EQUIPMENT AND INTELLIGENT INSTRUMENTATION

- ➊ Gravity flow factory
- ➋ Machines from low cost countries
- ➌ Change flow from batch to continuous
- ➍ Intelligent instrumentation
- ➎ Automation



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# GRAVITY FLOW FACTORY



Raw materials

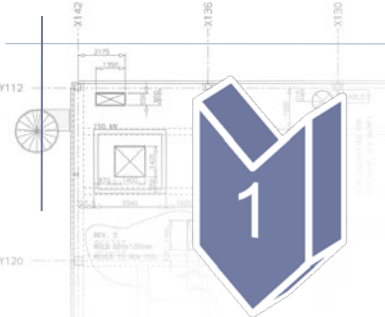


Finished product



Mountain





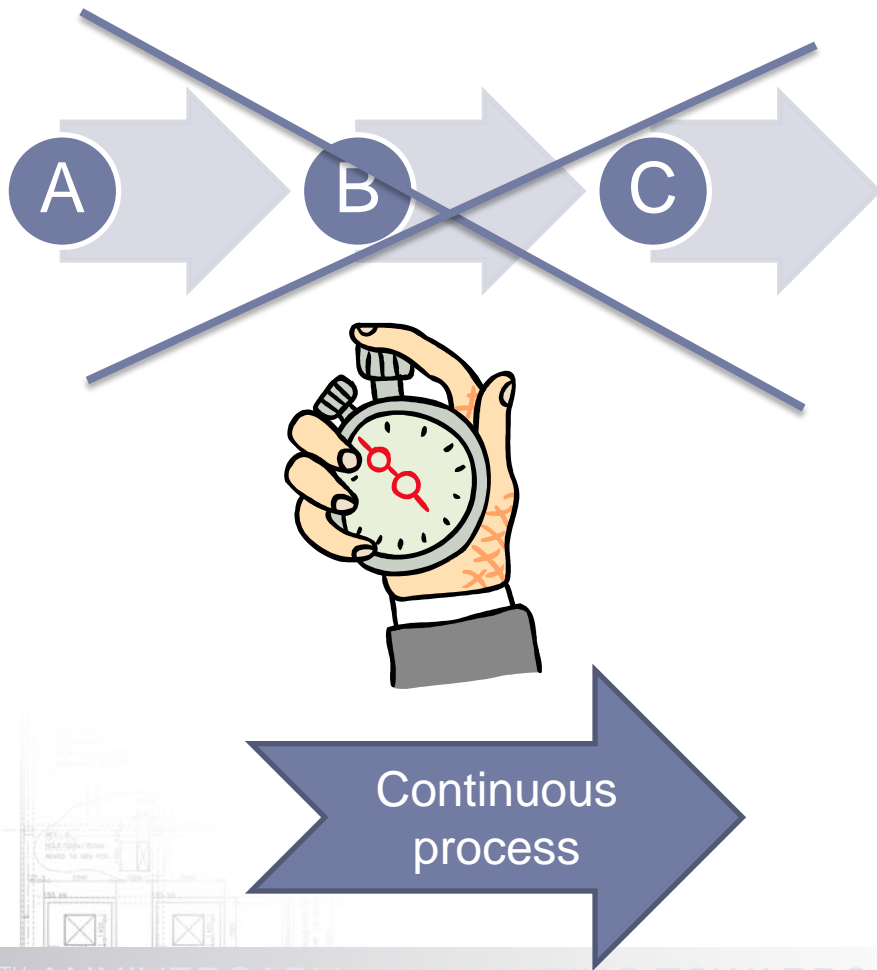
# MACHINES FROM LOW COST COUNTRIES



**Designed by Apple in California  
Assembled in China**

- Take advantage of low cost manufacturing in
  - China
  - Taiwan
  - India
  - South Korea
  - Vietnam, Thailand, Indonesia
  - Africa

# CHANGE PROCESS FLOW BATCH TO CONTINUOUS



- Continuous processing is more cost effective for processing large quantities



# INTELLIGENT INSTRUMENTATION



- ➊ Wireless intelligent instrumentation
- ➋ PDA handheld computers for control of complete plants





# AUTOMATION



- ➊ On-Line Instruments and Super Control Systems will reduce the need for experienced operators
- ➋ ExproMizer



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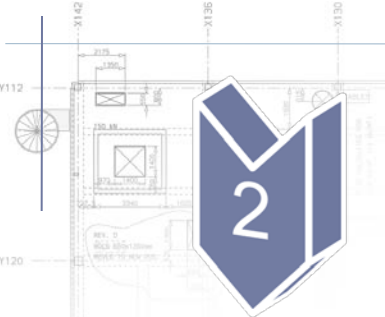
# LOGISTICS AND ENERGY

- ➊ Energy labelling of raw materials, equipment and finished products
- ➋ Recycle bin solution
- ➌ FPSO systems

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# ENERGY LABELLING



Energy		Washing machine
Manufacturer Model		
More efficient		<b>A</b>
<b>A</b>		
<b>B</b>		
<b>C</b>		
<b>D</b>		
<b>E</b>		
<b>F</b>		
<b>G</b>		
Less efficient		
Energy consumption kWh/cycle <small>(based on standard test results for 60°C cotton cycle)</small> <small>Actual energy consumption will depend on how the appliance is used</small>		0.95
Washing performance <small>A: higher G: lower</small>		<b>A</b> B C D E F G
Spin drying performance <small>A: higher G: lower</small> Spin speed (rpm)		<b>A</b> B C D E F G 1400
Capacity (cotton) kg		5.0
Water consumption /		55
Noise (dB(A) re 1 pW)	Washing Spinning	5.2 7.0
<small>Further information is continued in product brochures</small>		

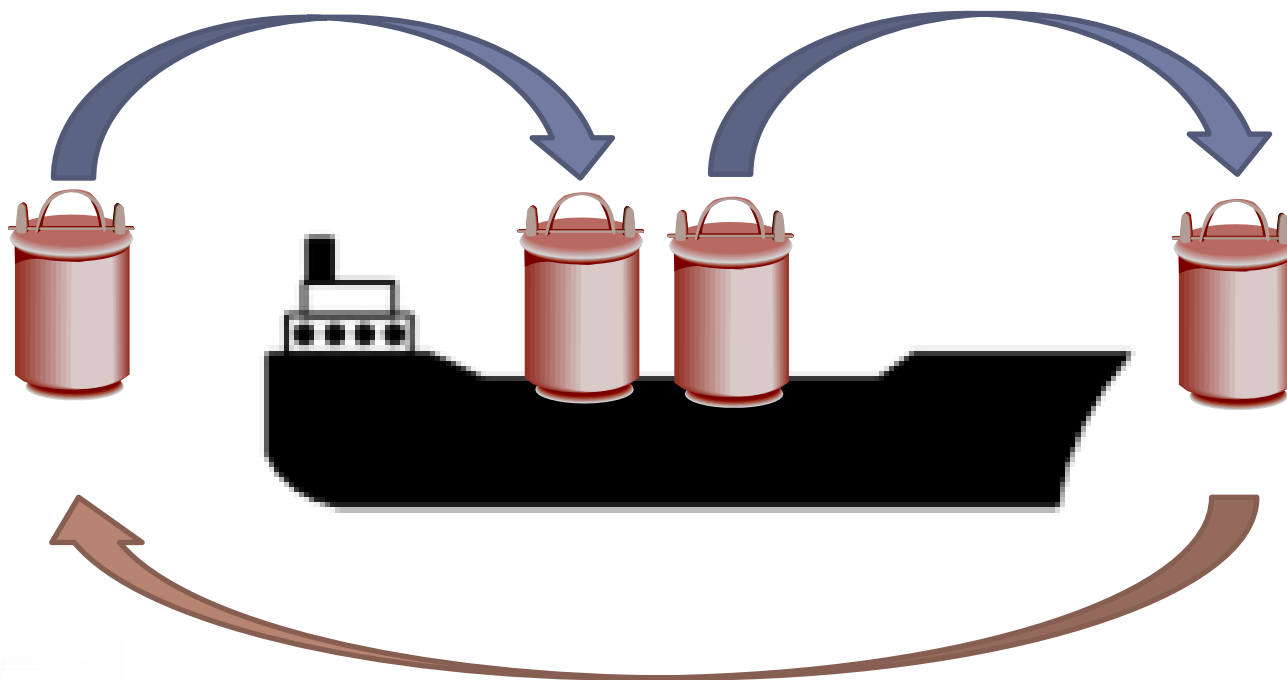
➊ Energy labelling of products and machines





# RECYCLE BIN SOLUTION

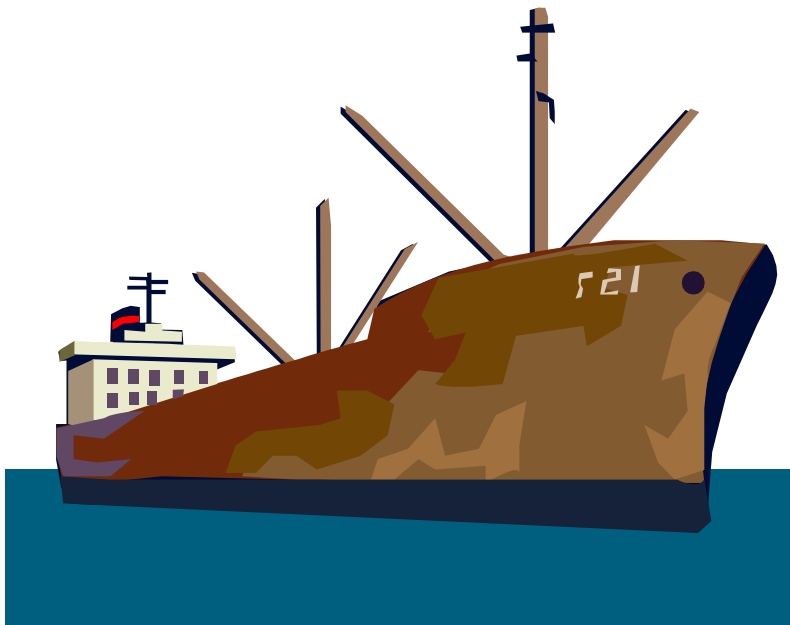
- Handling of finished product in bags is resource demanding



Replace bags by recyclable bins and containers



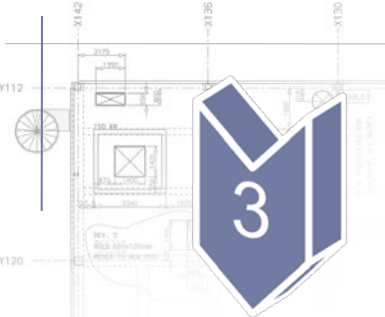
# FPSO SYSTEMS



- Manufacturing of products during transportation may save costs (FPSO systems)



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# DESIGN, ENGINEERING AND PROJECT MANAGEMENT

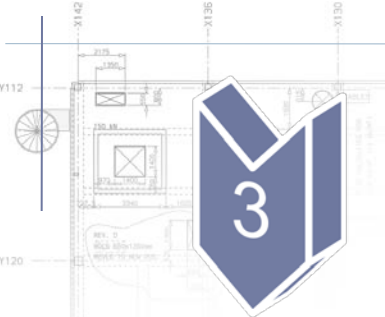
- 3D design and IT solutions
- Maintenance friendly design
- Review project design requirements
- Best practice



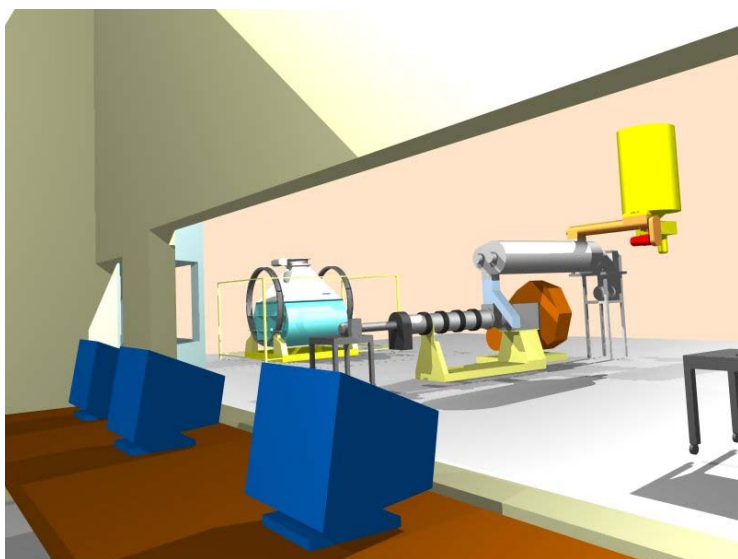
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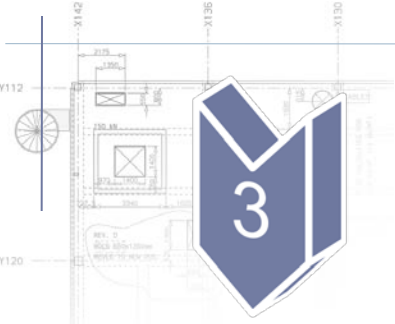
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# 3D DESIGN AND IT SOLUTIONS



- ➕ 3D plant design will:
  - Increase productivity of design work
  - Reduce mistakes
  - Generate better solutions
  - Make the design easier to understand



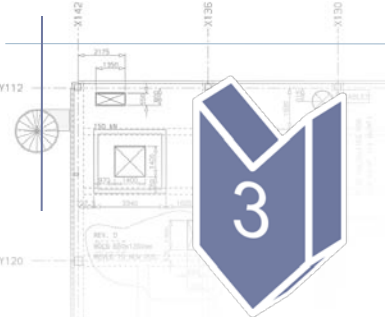


# MAINTENANCE FRIENDLY DESIGN



- ➊ Maintenance friendly design cuts cost and reduces hazards





# REVIEW PROJECT DESIGN REQUIREMENTS

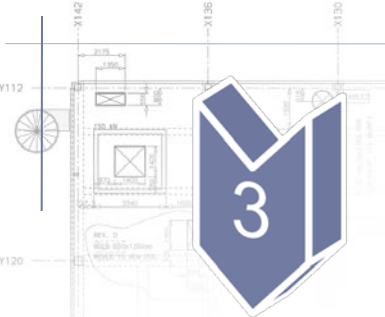


- ⊕ Thorough evaluation of project design requirements is essential to determine technical and economical functionality
- ⊕ Avoid the domino effect: One wrong decision may compromise or even jeopardize the success of the project

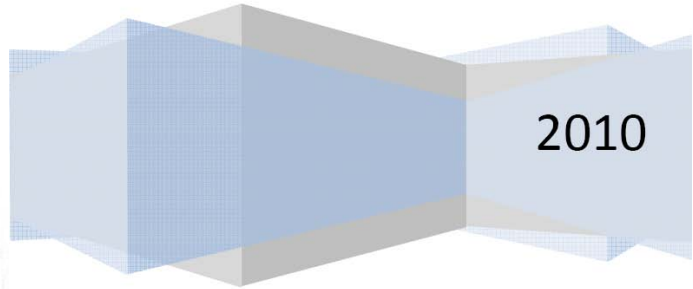


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# BEST PRACTICE



- ➊ Experience from more than 350 completed projects
- ➋ Quality control according to ISO 9001 in engineering and project management





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# SUMMARY



- ➊ Gravity flow factory
- ➋ Machines from low cost countries
- ➌ Change process flow from batch to continuous
- ➍ Intelligent instrumentation
- ➎ Automation
- ➏ Energy labeling of raw materials, equipment and finished products
- ➐ Recycle bin solution
- ➑ FPSO systems
- ➒ 3D design and IT solutions
- ➓ Maintenance friendly design
- ➔ Best practice
- ➕ Review project design requirements

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