DryTech 2008

Lumber Drying
„WE KNOW HOW“

- Hardwood Kilns
- Softwood Kilns
- Track loaded Kilns
- Direct heated Kilns
- High-Speed Kilns
- Steaming chambers
- High Performance Plants
- Pre-dryer

Consulting & Technical Sales
Corporate Training
Production Management
Research & Development
Process Optimization
“Trends in Europe”

European Developments in Kiln Drying
Drytech NZ 2008
“Trends in Europe”

International technology development
New process Technologies
MC measuring systems
Energy Management/ Recovery
Environmental Issues
“Trends in Europe”
International technology development

In New Zealand:
Radiata Pine
Cart-loaded kilns
Appearance dried at 90°C
Structural dried at up to 140°C
“Trends in Europe”
International technology development
Cart-loaded kiln
“Trends in Europe”
International technology development
Cart-loaded kilns (5 x 75m³)
In Europe:
Predominantly Spruce
Forklift loaded
Traditional dried up to 70°C
“Trends in Europe”
International technology development

European modern developments:
Temps increasing from 60-70°C to 80-90°C
Airflows increasing from 2-3m/s to 4-5m/s
Results:
Drying times reduced from 5-6days to 2-3days
“Trends in Europe”
International technology development

*European* modern developments
Forklift loaded kilns
Reduced capital investment
30% more kilns than needed
Large scale mills being built
“Trends in Europe”
International technology development
Forklift loaded kiln

Max. 12,000
DryTech 2008

“Trends in Europe”
International technology development
Forklift loaded kilns (4 x 150m³)
“Trends in Europe”
International technology development
Forklift loaded kilns (56 x 250m³)
"Trends in Europe"
International technology development
A German (Klausner) sawmilling development model

<table>
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<th>Date</th>
<th>Mill</th>
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<td>Total</td>
<td></td>
<td>5,300</td>
<td>10,600</td>
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</table>
**“Trends in Europe”**

**International technology development**

**The New Zealand sawmilling development model in the first decade of the century**

- City Forests sawmill project blocked by the company’s owners (Dunedin District Council)

- The Waipa sawmill was purchased for a reported NZ$ 1.00 – or was that US$ 1.00?

- CHH’s Rainbow Mountain sawmill closed forever – soon after being purchased for a reported $50 million+ followed by Kopu and Putaruru

- Ernslaw One’s Coromandel sawmill project blocked by Environment Court after ~5 years of applications and >$ 1.0 million in RMA costs

- Southland mill owner Brightwood first announces its mill closure in 2007; then recants the announcement – but says it will reduce to one shift

- Lakesawn Lumber being closed forever
"Trends in Europe"
New process technologies

Thermally Modified Timber (TMT)
Environmentally friendly treatment process
Improves durability (insects and fungi attack)
Uniform chocolate colour
Market price +€180/m³
Huge Market growth in this product
Dresden classification certificate
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“Trends in Europe”
New process technologies (TMT kiln)
DryTech 2008

“Trends in Europe”
New process technologies (TMT radiata)
“Trends in Europe”
MC Systems

European pin systems
Wireless systems
Multigrip
Dryzone
"Trends in Europe"
MC Systems (Wireless probes)
“Trends in Europe”
Energy Management/ Recovery systems

Mahild’s *Eco-Vent* system
“Trends in Europe”
Energy Management/ Recovery systems

Mahild’s *HP Water Spray* system
"Trends in Europe"
Energy Management/ Recovery systems

Mahild’s
Energy Management
MM4000 Control system
“Trends in Europe”
Energy Management/ Recovery systems

Mahild’s *Energy Management* MM4000 Control

- Use of VSD to reduce peak electrical costs
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Environmental Issues

• Eco-friendly kilns
• Low energy
• Low noise emissions
• Increased insulation factors
• Foundations that capture all effluent
• Materials that all can be recycled
“Trends in Europe”
Summary

- Lower temp kilns
- Large scale
- Energy saving
- TMT
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