GLOBAL DEVELOPMENTS

and

TIMBER TREATMENT TRENDS

TIMBER TREATMENT HELPS WOOD TO BE A

- Better
- More Competitive
- More Valuable

BUILDING MATERIAL
## TIMBER TREATMENT TRENDS

<table>
<thead>
<tr>
<th>Untreated</th>
<th>Transition</th>
<th>Treated</th>
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</thead>
<tbody>
<tr>
<td>Fire Wood</td>
<td>Framing</td>
<td>Marine Piles</td>
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<tr>
<td>Boats *</td>
<td>Trusses</td>
<td>Railway Sleepers</td>
</tr>
<tr>
<td>Furniture *</td>
<td>Engineered Woods</td>
<td>Posts &amp; Poles</td>
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<tr>
<td>Floors *</td>
<td>Structural Panels</td>
<td>Decks &amp; Fences</td>
</tr>
<tr>
<td>Interior Joinery &amp; Panels</td>
<td>Weatherboard Cladding &amp; Exterior Joinery</td>
<td>Windows &amp; Doors</td>
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</table>

### DRIVERS

- Natural Agents
- Building Materials and Practices
- Responses from Society
- Competition
DRIVERS

- **Natural Agents**
  - Termites & other Insects: France, US, Tsunami Relief, Australia
  - Decay: Canada, US, New Zealand
  - Mold: Japan, Germany, US
  - Fire: California
  - Weather: Northern Europe
  - Ecosystem Changes:
    - Climate / Microclimate
    - Foreign Species
    - New Foods
  - Human Change:
    - Habitat: More Confined, More Niches
    - Health: Robustness, Allergies, Asthma

- **Building Materials and Practices**
  - Building Wrap & Air Tightness
  - New Exterior Coverings
  - On Site vs. Pre Fab
  - Architectural Trends
  - Cost Reduction
  - Building Research
  - Standards
**Timber Preservation 2006**

**Drivers**

- **Responses from Society**
  - Public Interest Groups
  - Public Perception
  - Research and Recommend
  - Legal
  - Economics
  - Politics
  - Public Protection
  - Government Regulations
  - Government Incentives
  - Insurance
  - Schemes

**Multistakeholder Forums**

- Communicate and Plan

**Chemical Stewardship**

- Approval and Use
  - Health, Safety & Environment

- Schemes
  - "Green Building" and Energy
  - Recycling and Reuse

**Unified Wood & Treatment**
DRIVERS

• Competition

- Economics (Exchange, Demand, Trade)
- Global Sources of Wood
- Engineered Wood and Panels
- Consolidation of Wood Supply
- Consolidation of Buyers
- Special Interest
- Consolidation of Users
- Energy Conversion
- Natural Disasters (MPB, Hurricanes)
- Alternatives to Wood
- Treatment Technologies

DRIVERS

• Alternatives

Steel:
- Frame, Truss, Joist

Plastic:
- Decks, Fences, Joinery, Cladding

Fiber Plastic:
- Decks, Fences, Joinery, Cladding

Concrete:
- Frames, Posts, Poles, Marine, Sleepers

Fiber/Cement:
- Cladding, Weatherboard
**Steel Framing Benefits**

- Uniform
- Most Recycled
- Fire Resistant
- "Green"
- Termite, Decay, Rot Proof
- Wind Resistant
- No Chemicals
- Strong & Straight
- Little or No Waste

**Steel Alliance**

**Competition: STEEL**

**Case Study: Hawaii Framing**

- **1985:** 95% Wood – Envelope Treatment
- **1990:** Soil treatment stopped
  - 90% wood
- **1995:** Significant Termite Failures
  - 80% wood
- **2000:** Full penetration treatments
  - 40% wood
- **2005:** 30% wood - 70% Steel

**Competition: STEEL**

**Case Study: Mainland US Framing**

- **2005:** California
  - 5 – 10% Steel & Growing
  - Mold, Fire
- **2005:** Gulf Coast
  - 5-10% Steel & Growing
  - Termites and Wind
- **2005:** Florida
  - 25% Steel & Growing
  - Lennar Announces Steel Partnership
  - Soil Treatment Ban
- **2005:** Steel (26 gauge)
  - $0.55 US per linear ft
  - Untreated Pine $0.38 US per linear ft
  - PT Treated Pine $0.52 US per linear ft
DRIVERS

TREATMENT TECHNOLOGIES

• Processes
  – More Rapid Cycles
  – Catalytic Conversion of Solvents
  – Critical Fluids
  – Dual Treatments
  – In-line Penetration
  – Bulk Dip Penetration
  – Spray on Diffusion
  – Glue Line / Integral
  – Acetylation / Furfurylation
  – Heat Treatment

DRIVERS

TREATMENT TECHNOLOGIES

• Formulations
  – A Few Good Actives
  – New Adjuvants / Synergists
  – Low Corrosivity Quats
  – Combinations – ACQ, Cu-Azole, Cu-HDO
  – Borates, Borates, Borates
  – New Synthetic Pyrethroids
  – New Nicotinimides
  – Release & Control Formulations
  – Silicates
TIMBER TREATMENT
CASE STUDIES

Window & Door Manufacturers (WDMA)

1985: Pentachlorophenol Restriction
1989: TBTO Performance Issues
1990: Market Movement to Low Maintenance
      Vinyl takes off 35% share
1995: Wood with Vinyl & other High performance covers
2000: Wood with High Performance treatments
2005: Wood with efficient rapid processes
      Wood share strengthens at 25% of 70 million Windows

Engineered Woods in Hawaii & Western US

1980: Termite and Rot Issues
1985: Third Generation LOSP Treatments
1990: LOSP Hold up against Termites
2000: Fourth Generation LOSP Treatments
2005: Treated E-Wood 90% Share
**UK Timber Frames and Trusses**

2000: Pre fabricated Timber Frames take hold
- H2 / P1 Low Cost Envelope
- Frame Producer End Treatments
- Building Research

2005: Factory Timber Frames and Trusses
- Takes off as the new leading building type

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**Japan Wood Frames**

2000: JTCA and JWPA Joint Standards
Site Spray and Treated Wood

2005: Wood Framing Dominates
TIMBER TREATMENT
CASE STUDIES

European Weatherboard

2000: Renewed interest in Weatherboard
“low impact” solutions

2005: Many Options
- Acetylated
- Furfurylated
- Heat treated
- Borate treated
- Azole treated

TIMBER TREATMENT TRENDS

- China’s impact on Steel and Plastic
- Crude Oil Costs
- Supply of Wood
- Wood in the Correct Uses
- Treated to the Correct Specs
- Use of Accepted Chemicals
- Stewardship of Treated Wood
- Qualified Representation
- Alliances with Wood Producers
- Recycling and Reuse
- Green Building Schemes
- Ownership of Issues
# ACKNOWLEDGEMENTS

<table>
<thead>
<tr>
<th><strong>Individuals</strong></th>
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<tbody>
<tr>
<td>Mike Barnes</td>
<td>United Nations - FAO</td>
</tr>
<tr>
<td>Laurie Cookson</td>
<td>HLPA - Hawaii</td>
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<tr>
<td>Jeanette Drysdale</td>
<td>USDA – Forest Service</td>
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<td>Peter Fitzsimons</td>
<td>Forintek Canada</td>
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<td>Mick Hedley</td>
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<td>Alain Jermanaud</td>
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**KOP-COAT INC.**

**FIEA**

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**BUILDING MATERIAL**

**KOP-COAT INC.**

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