Softwood Lumber
Potential Applications in
Thai Home Construction

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The 2018 International Fellow from Thailand
Geographical Location

- Central mainland Southeast Asia
- Tropical region
- Total area: 127 million acres (2x OR)
- Population: 69 million (16x OR)
- Capital: Bangkok
- GDP per capita: 30 (USA=100)
- Agriculture-based country
Thailand’s Forests

- (1989) Natural forests logging ban
  28% forest cover
- (2017) Natural forests area grew to
  32% forest cover
- 88% of forests owned by the state
- Plantations: para rubber, eucalypts, and teak

Source: http://new.forest.go.th/land/
Tropical Hardwoods vs Softwoods
Timber Trade (2016)

Logs and Lumber Imports by Origin (million USD)

<table>
<thead>
<tr>
<th>Country</th>
<th>Logs &amp; Lumber</th>
</tr>
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<tr>
<td>China</td>
<td>1,259.53</td>
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Logs and Lumber Exports by Destination (million USD)

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Source: Thai Customs Department
Traditional vs. Modern Thai House

Source: www.pattayatrader.com/homegarden/Traditional-Thai-House-Design
Homebuilding Methods in the U.S. vs Thailand

Wood-frame construction

Post and beam construction

Source: http://civilstudentstuff.blogspot.com/p/construction-methods.html

Source: www.ihome108.com/review-new-house-old-wood/
SWOT Analysis

**Strengths**
- High quality at competitive price
- Kiln-dried and treated lumber choices
- Sustainably produced

**Weaknesses**
- Negative perception on durability
- Little knowledge and unfamiliarity
- Tropical wood preference
SWOT Analysis (cont.)

Opportunities

▪ Relying on imported wood
▪ Zero import tariffs
▪ Logging ban and stringent policies

Threats

▪ Lower building cost by using non-wood building materials
▪ Bad rap on wood-product uses and industries
▪ Thai policies

Photo credit: (c)FAO/K. Boldt
Fasteners and Connectors

A Complete Connector System for Patio Cover Construction

PCZ/EPCZ
Post Cap
Tie posts to beams; accommodates several size holes

KBS1Z
Knee Brace Stabilizer
Post-to-beam brace connection

CCQHDG
CCQSS
Column Cap
Provides multiple high-capacity beam-to-column connector options

CBSQ44HDG
Column Base
Tie 4x4 post to concrete

ABU44Z
ABU44SS
Post Base
Tie 4x4 post to concrete

RPBZ
Retrofit Post Base
Secures existing posts/columns; must use with CPS standoff base to meet 1" standoff per code

LUS28Z
LUS28SS
Light Double-Shear Joist Hanger
Ties girder to girder

Strong-Drive® SDWS
Timber Screw
Ledger attachment design per code; visit our website for spacing instructions

H2.5AZ
H2.5ASS
Hurricane Tie
Tie joint to girder at mid-deck; tie deck cover rafter to beam

AC4Z
AC4SS
Post Cap
Ties 4x post to 4x beam (grade)

H1Z
Hurricane Tie
Tie joint to girder at mid-deck; tie deck cover rafter to beam

CPS
Standoff Base
Provides 1" standoff.

Source: www.strongtie.com
Next Steps: Explore

- Alternative sources of high-quality softwood lumber
- Applications:
  - Treated softwood lumber
  - Platform framing
  - Hybrid material construction
  - Prefab/ modular housing

Collaboration Opportunities

- Gov. / Universities / Industries
- Education and technical assistance Seminars/ workshops/ trainings

“Everyone was so busy saving a tree, they forgot they could lose the forest.” – Kathy Abusow @TEDxWilmington
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Ted Panton (GGLO)
Indroneil Ganguly (CINTRAFOR)

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