CocoVeneer: Equipment suite

Peeling coconut – Equipment suite
Base equipment suite.
• Log heating unit
• Spindle-less lathe
• Handling equipment
• Veneer drying
• Support infrastructure
  – Electrical supply
  – Log and veneer handling and storage

Regional trial costings
To ensure high-quality CocoVeneer, logs pre-conditioning is required.

- A temperature ~ 70 – 80°C should ideally occur through the log.
- This requires prolonged exposure to high temperatures and moisture.
Log heating unit

Gas-fired hot water bath: TUD Suva
*Experimental volume unit only*

Boiler-driven steam chambers: VTB Labasa
Log delivery in the lathe

Log deck: TUD Suva

Log deck: VTB Labasa
The project selected a robust 4 ft. Malaysian lathe, designed for palm.

Unit specification focused on peeling coconut

- Drive rollers are grooved to increase log grip.
- Pressure drive is hydraulic allowing more direct control.
Spindle-less lathe

- The base unit was upgraded to increase safety and control.
- Programmable control equipment was installed.
Spindle-less Lathe

- Guards, electrics, stop switches, and other safety equipment were upgraded.
Veneer handling

• Veneer must be drawn away from the lathe on conveyors as it is peeled.
• The veneer ribbon is then clipped to the required size.
Veneer handling
Basic production suite in place
Drying the veneer

• Peeled veneer has a high moisture content and must be dried before further processing.
  – Material stored or transported green is prone to fungal infection.
• Industrial veneer operations invariably use large, boiler-driven jet box dryers.
• Smaller operations may air or kiln dry the material.
Industrial veneer dryers

Large commercial jet box dryer

Jet box dryer: VTB Labasa
Smaller scale air drying

Veneer racked for air drying

Container solar-assisted kiln: TUD Suva
Lathe lines need support infrastructure:

- Forklifts and log handling equipment.
- Log yard
- Electricity supply
  - sufficient to drive the equipment.
- Heat source
- Veneer storage areas.
Regional trial costing

• Project objective 3.2 was Assessing the potential of a regional trial and demonstration program.
• Three regional trial locations and four sites in rural Fiji, Samoa and the Solomon Islands were assessed for their potential to operate a lathe.
• Costs for acquiring lathe equipment suite for regional demonstration were established.
A report detailing capital and other costs is available at: [www.cocowood.net](http://www.cocowood.net).
Costs do not include full log preconditioning capacity.

<table>
<thead>
<tr>
<th>Project cost summary ($)</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
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Summary

• The base components of a lathe equipment suite for peeling coconut regionally and general costs have been established and are available.

• Equipment capital costs will vary considerably with the intended scale of the facility.
  – Large scale operations need major capital items such as a boiler and veneer dryer.