



BRIGHTWATER

PROJECT REPORT

Plantation Pulpwood Terminals (PPT) Truck Dumpers and Chip Stacker

Albany W.A. 2004 & 2005



CONCEPT

DESIGN

MANUFACTURE

INSTALL

COMMISSION

TURNKEY SOLUTION PROVIDERS TO INDUSTRY



The Situation

PPT is a joint venture between Timbercorp and ITC who are plantation forest owners and managers and major chip exporters of mainly eucalyptus chips. Their Western Australia operation exports through a new terminal at the Port of Albany near the south western corner of West Australia. For Stage 1, Brightwater joined with Rader Companies Inc. to build a 33m slewing and luffing stacker, and shipped it to Western Australia. This is able to form a 110,000m³ (50,000 tonne) pile of chips, without the use of bulldozers. Stage two of the project was to provide two truck dumper systems to enable the operation to ramp up from handling 300,000 tonnes per year to over 1 million tonnes per year. The system connects with an existing ship loader which enables 40,000 tonne capacity ships to be loaded in 36 to 40 hours.

Stage One – Stacker:

PPT contracted Brightwater to supply a slewing, luffing stacker which could prepare a 50,000 tonne stockpile of chips. The port is prone to windy conditions and the port authority was keen to reduce wind blown dust from the stacking operation. Traditional methods of chip pile building, using bulldozers, are noisy with bulldozer tracks breaking up the chips and increasing the fines content. PPT were keen to eliminate these nuisances, and the solution offered by Brightwater met all the requirements.

The Solution

Brightwater contracted Rader Inc. of Atlanta as their partner to design a radial stacker with luffing boom which could automatically build up a 50,000 tonne stockpile of wood chips. Brightwater manufactured the stacker components and shipped them to WA.

The pile building is commenced with the boom lowered and as the pile grows the boom automatically luffs up a small distance ensuring the chips never fall more than a few meters onto the pile. This eliminates wind effects. The boom slews through 270 degrees to form a kidney shaped pile. The stacker has a 33m long boom and can build a pile 25m high.

The Benefits

- 110,000m³ of automatically built chip pile
- Eliminates wind borne dust from pile building
- Eliminates bulldozer usage for pile building
- Easily maintained
- Custom design, manufacture, and commission
- After market support

The Specifications

Stacker

Material	Hardwood chips
Density	400 kg/m ³
Method of supply	Overhead conveyor
Storage capacity	110,000m ³
Rate of discharge	400 tonnes per hour
Discharge method	Belt conveyor
Height of stockpile	25m
Width of pile at base	50m
Length of boom	33m



Stage Two – Truck Dumpers:

Brightwater fabricated and supplied two truck dumper systems adapted from existing Rader designs to receive chips from purpose built truck and trailer units (which do not self tip). The truck and trailer unit drives over a bridge and parks on the tilting platform. The entire platform is raised hydraulically to 55 degrees above the horizontal and the unit is emptied into a hopper below the now raised bridge. The hopper can hold more than a complete trailer load and the discharge rate from the hopper is such that up to 6 trucks per hour can be emptied in each lane.

A large chain conveyor in the bottom of the each of the hoppers, conveys the chips out of the hopper into a second chain conveyor this carries the chips from both dumpers to a screen which removes oversize material, they are then conveyed to the stacker and stockpile.

The two truck dumper systems are installed side by side at 2.6m above the surrounding ground, this minimises the depth of pit required for the receiving hoppers. When the system is running at full capacity of 1 million tonnes per year, a ship will call every 2 weeks, loading 35,000 to 40,000 tonnes each trip.

The Benefits

The truck dumpers enable non self tipping trucks to be employed. This increases the carrying capacity of each truck to just under 30 tonnes. The fast turn-around enables the required tonne rate to be achieved with the minimum number of trucks in a 20 hour per day operation.

The Specifications

Two lanes each comprising:

Pit Bridge and Truck dumper

Pit Bridge Length	7m
Pit Bridge Width	4.5m
Pit Bridge Angle	81 degrees
Capacity (max)	45 tonnes
Weight pit bridge	5 tonne
Truck dumper Length	17m
Truck dumper Width	4.5m
Truck dumper Tipping angle	55 degrees
Truck dumper Capacity (max)	45 tonnes
Tip cycle time	Less than 4 minutes
Weight dumper platform	20 tonne

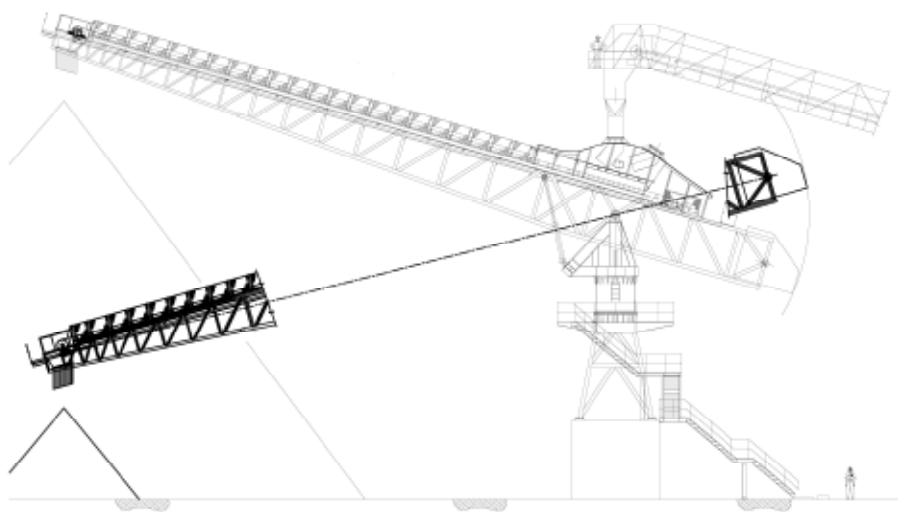
Hopper

Volume	110m ³
Discharge rate	100 tonne per hour of woodchip
Chains	4 x WX480 with wings
Drive	22 kW SEW planetary gearbox shaft mounted
Weight each total	22 tonne

Transfer conveyor

Type	En masse
Size	CW48 1200 x 1000mm
Capacity	500m ³ /h (200 tonne per hour of woodchip)
Length	21m
Drive	45kW parallel shaft gearbox shaft mounted
Weight	8 tonne





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