



Brightwater

PROJECT REPORT

Biomass Fuel Handling System

Pan Pac Forest Products LTD, Whirinaki, Napier

2002



Shavings Reception and Conveyors - 800m³ Silo - 600m³ Saxlund Pull Floor

TURNKEY SOLUTION PROVIDERS TO INDUSTRY

CONCEPT



DESIGN



MANUFACTURE



INSTALL



COMMISSION



OPERATE



The Situation

During 2001-2002, Pan Pac Forest Products Ltd installed a 36MW Easteel Bubbling Fluid Bed (BFB) Boiler. Pan Pac required a Fuel Handling system to store and deliver fuel for the new boiler. The fuel comprises coarse green woodwaste and dry shavings which require storing separately and then delivering to the energy plant in a blended and metered condition according to furnace demand.

The Solution

The Fuel Handling and Management System designed, supplied, installed and commissioned by Brightwater comprises equipment to separately store and reclaim coarse woodwaste as the primary fuel for the boiler and a shavings handling and storage system. The coarse woodwaste, which contains bark, green woodwaste, sawdust and some wood chips, is pushed into a 600m³ bunker by bulldozer.

The hydraulically actuated Saxlund pull floor ladder system automatically reclaims and meters the coarse woodwaste onto the conveyor feeding to the new boiler as demanded by the boiler controls.

The shavings are transported from Pan Pac's planer mill to the boiler area by special truck and tipped into a below-ground receiving conveyor for transport to the 800m³ shavings silo. In the base of the silo, a Continental Circular Slewing Reclaim Screw (CSRS) recovers the shavings into screw conveyor systems feeding both the existing boiler and the new BFB boiler installation.

The Benefits

- Robust medium sized storage facility providing 6 to 8 hours storage.
- Controlled and even discharge
- Covered storage
- Automatic Reclaim
- Safe and efficient storage and discharge of the dry shavings
- Totally sealed environment giving a leak/windproof and tidy operation.
- Low wear and tear on components
- Fully automatic, reducing on-site labour.
- Easily maintained.

Overall System

- Turnkey construction – design, supply, build and commission
- Controlled Fuel management
- Reduced reliance on mobile plant



The Specifications

Shavings Reception and Storage

Material	Dry shavings
Density	80 -100kg/m ³
Method of delivery	T ruck
Reception Conveyor	2.8m wide apron beltchain conveyor
Capacity	960/240m ³ /hr
Transport Conveyor (to silo)	Continental EnMasse type chain conveyor model CW40-2
Capacity	360m ³ /h
Width	1,000mm
Length and Elevation	36m x 25m
Silo	18m high, 10m in diameter
Storage Capacity	800m ³
Rate of discharge	130m ³ /h
Reclaim Screw	Continental CSR3HD
Discharge Screws (2 off)	Capacity 65m ³ /h, Diameter 500 & 400

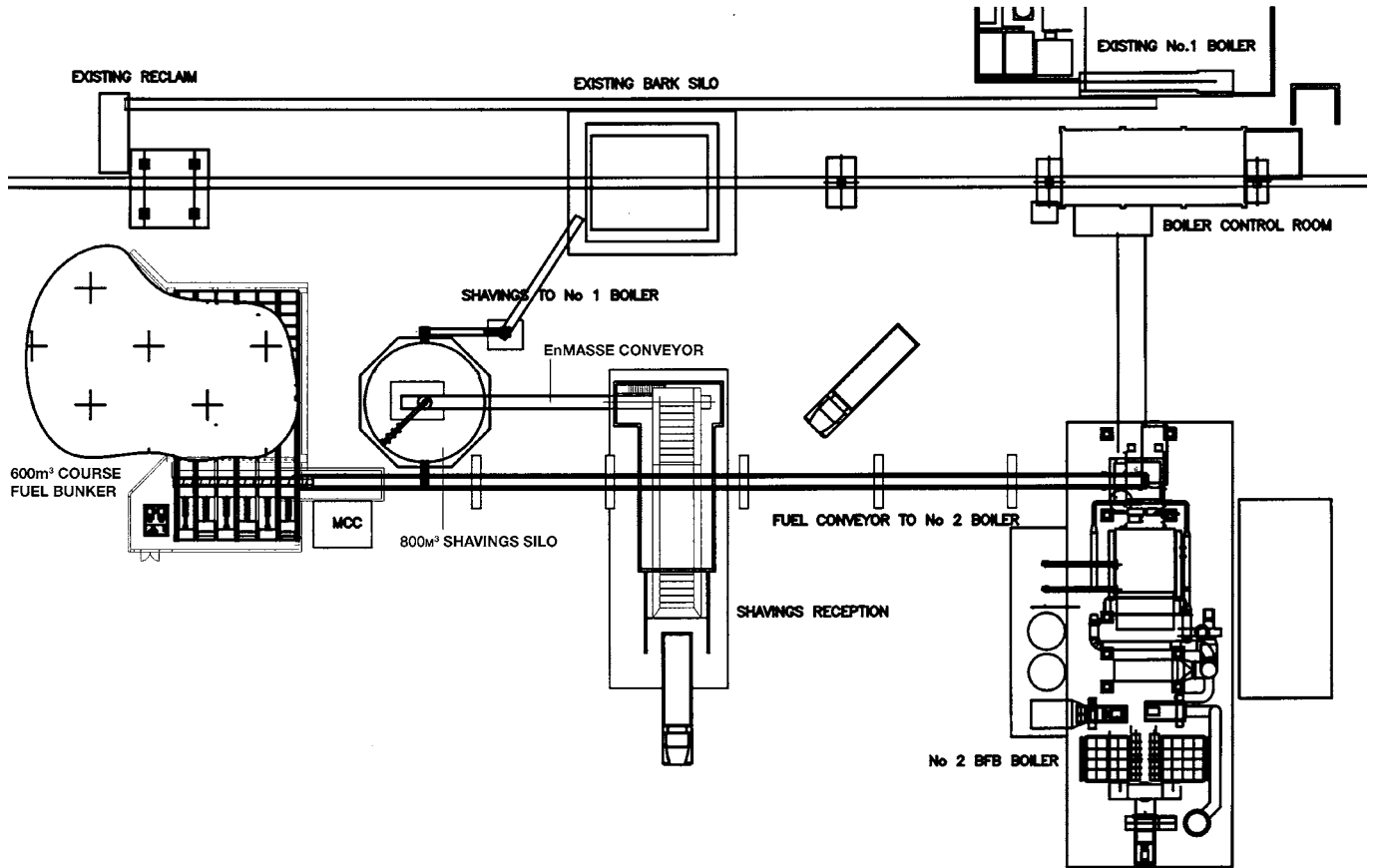
Transport Conveyors

Inclined screw conveyor 500 dia	Capacity 70m ³ /h
Enclosed 600mm belt conveyor	Capacity 70m ³ /h

Coarse Fuel Storage & Handling

Material	Coarse Woodwaste comprising: bark, green woodwaste, sawdust, wood chips
Density	350 – 500 kg/m ³
Method of delivery	Bulldozer
Storage capacity	600m ³
Discharge Method	Screw Conveyor
Discharge capacity	120m ³ /h
Saxlund Pull floor	10.5m x 14m
Storage height	4.1m
Transport	Enclosed gallery type 900mm Belt conveyor
Capacity	200m ³ /h





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