Brightwater
ENGINEERING

PROJECT REPORT

# Biomass Fuel Handling System

## Pan Pac Forest Products LTD, Whirinaki, Napier

2002

# 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/m3 |
| Method of delivery | Truck |
| Reception Conveyor beltchain | 2.8m wide apron conveyor |
| Capacity | 960/240m3/hr |
| Transport Conveyor (to silo) | Continental EnMasse type chain conveyor model CW40-2 |
| Capacity | 360m3/h |
| Width | 1,000mm |
| Length and Elevation | 36m x 25m |
| Silo | 18m high, 10m in diameter |
| Storage Capacity | 800m3 |
| Rate of discharge | 130m3/h |
| Reclaim Screw | Continental CSR3HD |
| Discharge Screws (2 off) | Capacity 65m3/h, |
| Diameter | 500 & 400 |

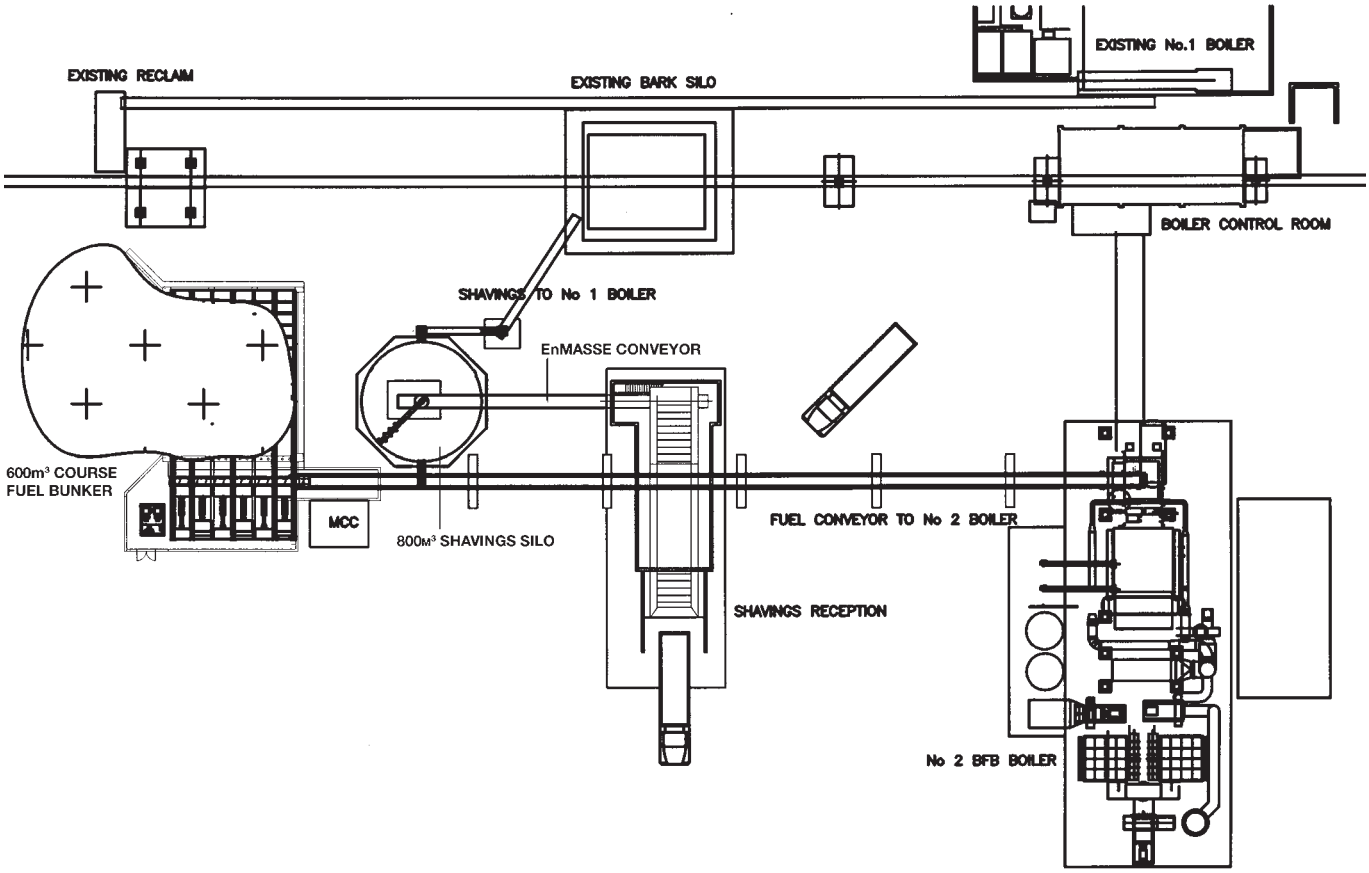
# Transport Conveyors

Inclined screw

| | |
|---|---|
| conveyor 500 dia | Capacity 70m3/h |
| Enclosed 600mm belt conveyor | Capacity 70m3/h |

*Coarse Fuel Storage & Handling*

| | |
|---|---|
| Material Coarse Woodwaste comprising: bark, green woodwaste, sawdust, wood chips | |
| Density | 350 – 500 kg/m3 |
| Method of delivery | Bulldozer |
| Storage capacity | 600m3 |
| Discharge method | Screw Conveyor |
| Discharge capacity | 120m3/h |
| Saxlund Pull floor | 10.5m x 14m |
| Storage height | 4.1m |
| Transport | Enclosed gallery type 900mm Belt conveyor |
| Capacity | 200m3/h |




Saxlund INTERNATIONAL

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