

# Welcome to Racecourse Mill



## SITE SAFETY

While you are with us at Racecourse Mill there are a few safety related requirements which you need to observe.

- Hard hats and glasses provided must be worn at all times.
- Hearing protection is recommended.
- If in a group please do not become detached from the group.
- If separated from the group please stay where you are.
- Stay on defined walkways.
- Children should be under the supervision of an adult at all times.
- Keep at least one metre away from all plant and equipment (moving or stationary).
- First aid attendants are available. (If in a group please notify your tour guide if you require any first aid).

## HISTORY

Racecourse Mill was built by the Racecourse Central Mill Company Limited in 1888 and processed a small crop as a trial crushing. Its first major crushing was in 1889.



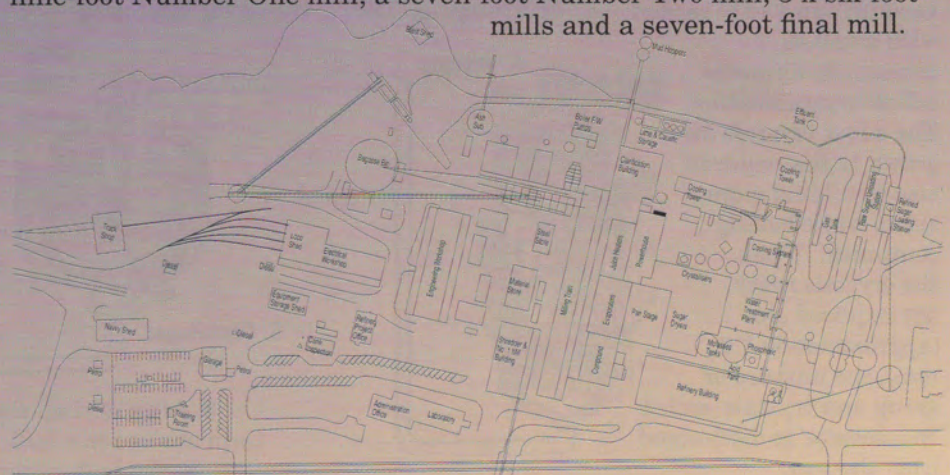
In 1927 a growers' co-operative was formed to take over the assets of the Company and it struck an agreement with Farleigh Mill to take over that mill's Homebush area in return for Racecourse Mill's Calen/Kolijo suppliers to the North. The mill has expanded over the years to process larger crops and became part of Mackay Sugar in 1988. The 350,000 tonne per annum capacity refinery, which is attached to the mill, began production in 1994.

## STATISTICS

Racecourse Mill has a nominal crushing capacity of 550 tonnes per hour but is capable of crushing in excess of 600 tonnes per hour given favourable cane quality and sugar content.

Farms supplying Racecourse Mill are now capable of growing crops totalling two million tonnes of cane. Cane is delivered to Racecourse Mill in 5 tonne bins along a cane railway system with a total of 200 kilometres of track, including sidings and loops.

Eight locos ranging from the 40 tonne DH500 Class locos down to the 18 tonne Clyde haul cane along the railway system. Sugar cane is processed through a Six-mill milling train at Racecourse consisting of a nine-foot Number One mill, a seven-foot Number Two mill, 3 x six-foot mills and a seven-foot final mill.

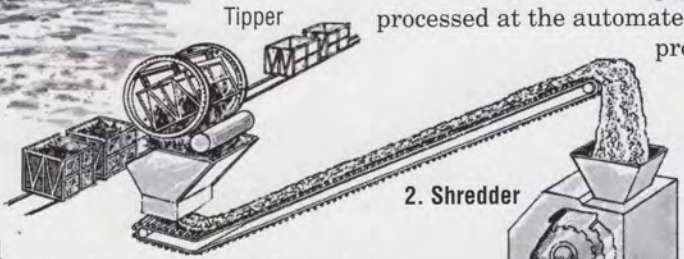


# From the cane plant to sugar



**1. Harvesting and transport**

1. After harvesting, cane is transported to the mill where it is weighed and processed at the automated cane-receiving station. The name of the producing farm and the weight of each cane bin is automatically recorded.



**2. The cane billets are tipped onto a cane carrier and transported to the shredder. The shredder reduces and shreds the cane into fibrous material and ruptures the juice cells.**

**2. Shredder**

**5. The clear juice from the clarifiers is concentrated by boiling it under vacuum in a series of connected vessels called 'effets' or 'evaporators'. The concentrated juice is called 'syrup'.**

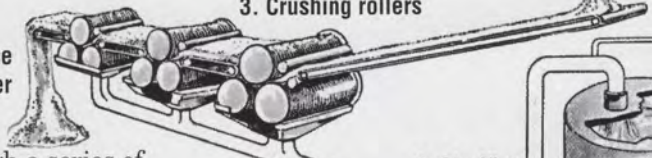


**5. Effet or evaporator**

**3. Crushing rollers**

Bagasse to boiler

**3. Rollers feed the cane through a series of mills. Each mill consists of five large rollers. This process separates the sugar juice from the fibrous material call 'bagasse'. The sugar juice is pumped away for processing into raw sugar and the bagasse is recycled as a fuel for the mill's boiler furnaces.**



**4. Clarifier**

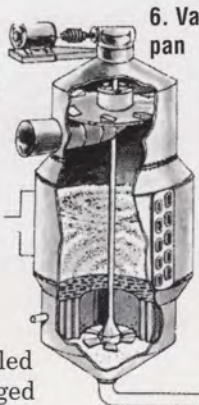
**4. Juice extracted from crushing mills contains impurities which are removed by adding lime and heating the limed juice. The lime neutralises acids and precipitates impurities which "settle out" in large specially designed vessels called 'clarifiers'. The clear sugar juice is run off from the top of each clarifier. Muddy juice extracted from the bottom of the clarifiers is mixed with fine bagasse and then filtered using cylindrical rotating vacuum filters to recover the sugar. The mud and bagasse mix (filter mud) extracted by the filters is used as a fertiliser on cane farms and in gardens. This recycles much of the phosphorous taken up from the soil by the cane plant.**

Steam

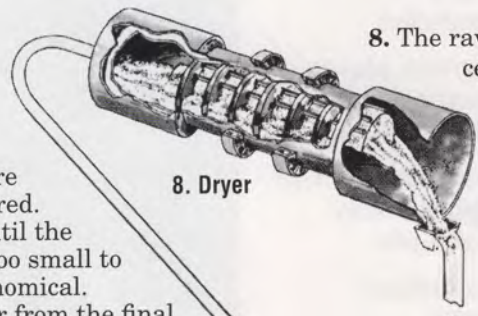
**7. Syrup is separated from the raw sugar crystals in centrifugals that contain perforated baskets which spin at high speed in a casing (similar to a household washing machine). The dark syrup surrounding the crystals is "thrown-off" and passes through the perforations. The spun-off syrup is boiled again and more raw sugar crystals are recovered. This procedure is repeated until the amount of sugar obtained is too small to make further extractions economical. Molasses is the syrup left over from the final centrifuging. This is stored for later sale.**

**6. The syrup (about 65 - 70 percent of sugar) is concentrated by boiling in a vacuum pan and is seeded with small sugar crystals in a process called 'crystallisation'.**

The sugar crystals are grown to the required size by adding more syrup while boiling continues. When the crystals reach the required size (approximately 1.0 mm), the mixture of syrup and crystals called 'massecuite' is discharged from the pan.

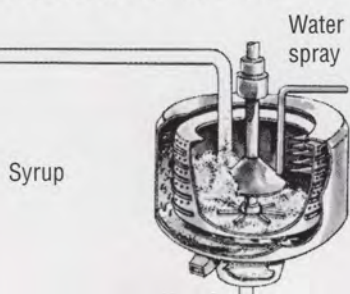


**6. Vacuum pan**



**8. Dryer**

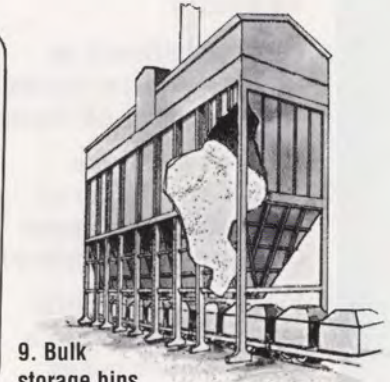
**8. The raw sugar from centrifugals is dried by tumbling through a stream of air in a rotating drum.**



**7. Centrifugal**

Syrup

Water spray



**9. Bulk storage bins**

**9. After drying, the raw sugar is transferred for short-term storage in a bulk bin at the mill prior to being stored at the bulk sugar terminal in readiness for shipping.**