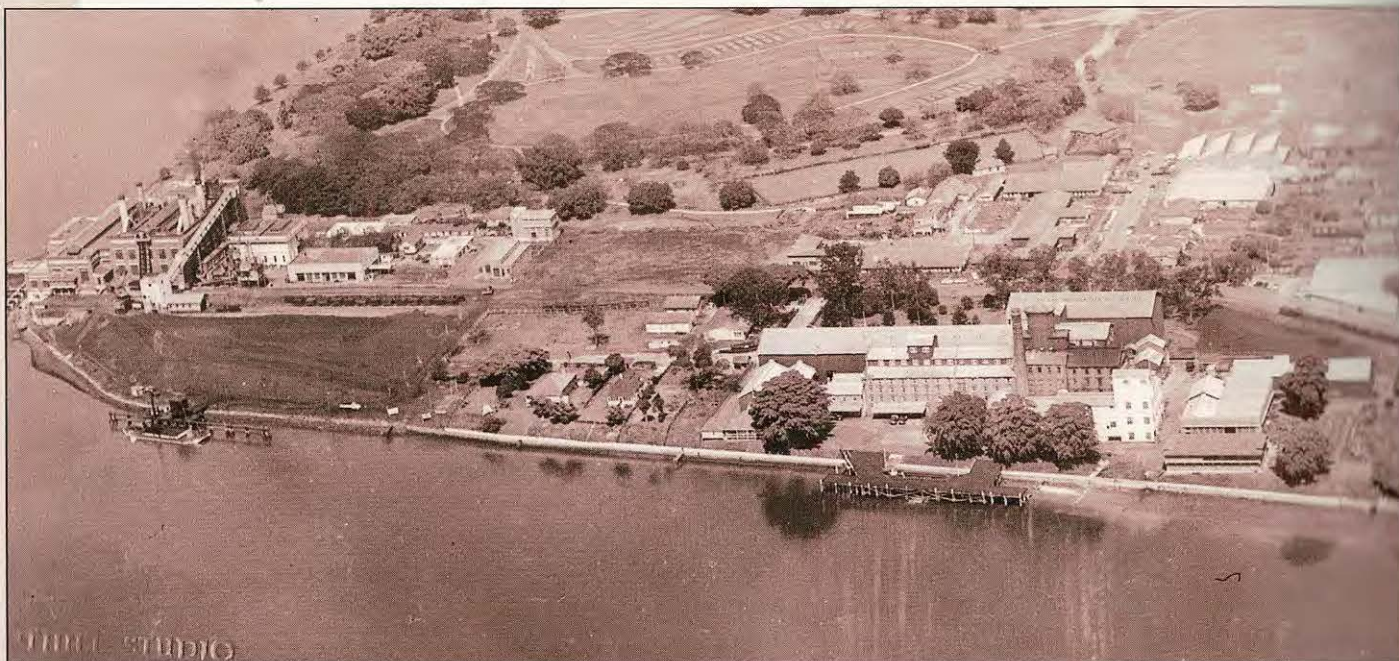


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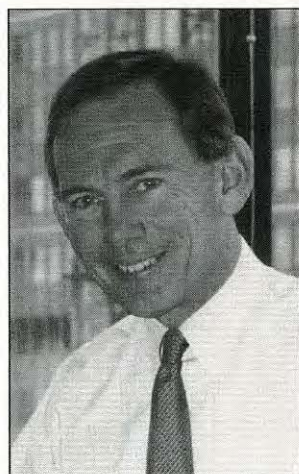
Spirit of New Farm

CELEBRATING A HUNDRED YEARS AT
CSR'S NEW FARM SUGAR REFINERY





New Farm sugar refinery is part of the proud history of the company. There are very few organisations still serving their customers 100 years after they commenced business. Long life in business says that you must be serving your customers well.



Having worked at New Farm refinery for three years in the late 1970s and early 1980s, I remember it as a place of enthusiastic people who enjoyed their work and lived in one of the nicest parts of Australia. As the pace of business has increased and New Farm expanded, challenges have obviously multiplied. During my time at New Farm we had the best of all worlds and a strong market as well.

G V Kells, Managing Director, CSR Limited

The heritage listed New Farm sugar refinery, on the northern bank of the Brisbane River, was built by the Colonial Sugar Refining Company Limited in 1893. It is still in operation, refining raw sugar produced in southern Queensland.

Spirit of New Farm

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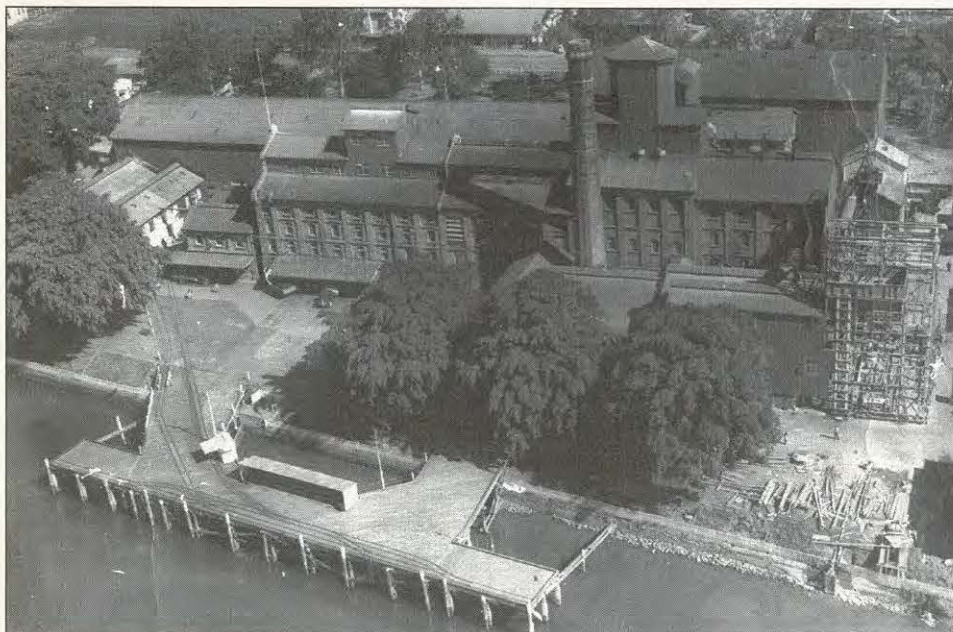
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On the Cover:

View of the main building from the courtyard circa 1950.

Building New Farm history



■ Left: aerial view from the river at the time of the expansion of the Boiler Station.



Barry McIntosh and Alan Johnson wore frock coats and hose to the New Farm refinery's Bicentenary Bash on 5 November 1988.

All the revellers were encouraged to wear period costumes and ride around the site on horse-drawn vehicles, before enjoying a spit roast and a bush band.

The Bicentenary Bash was a way of thanking the workers at New Farm and welcoming new manager Peter White.

The Colonial Sugar Refining Company Limited opened the New Farm sugar refinery on 12 August 1893. Although the opening was a low-key event, a local newspaper reported the establishment of the refinery as a sign of optimism about the future of the colony.

Situated in the inner-city Brisbane suburb of New Farm on the northern bank of the Brisbane River, the refinery is still refining raw sugar produced in southern Queensland. One hundred years after its opening, the building is now heritage-listed and proudly displays its federation colours. It is an institution steeped in history and the rich heritage of the New Farm community.

History of the site

Soon after Brisbane was settled, a 'new farm' was established on the northern banks of the river to supply maize, potatoes and pumpkins for the convict settlement. Each working day, the convicts travelled from the Queen Street barracks to cultivate the crops and returned in the evening.

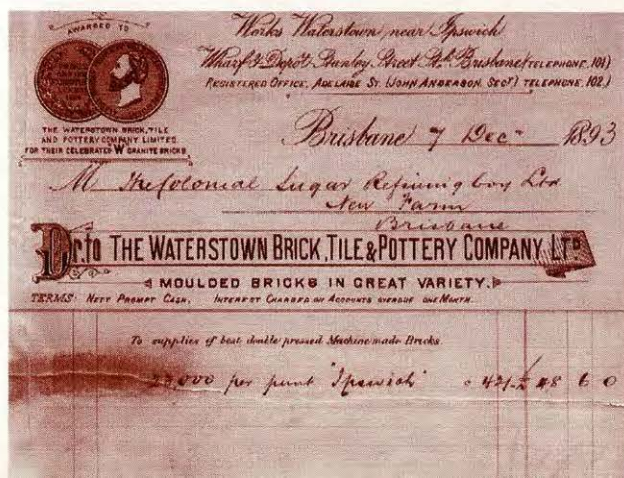
In 1842, the government closed the convict settlement and offered the land for sale to free settlers for the first time. The refinery site was first purchased by Thomas Adams.

In 1846, a race course occupied both the refinery site and the area which is now New Farm Park.

Building the refinery

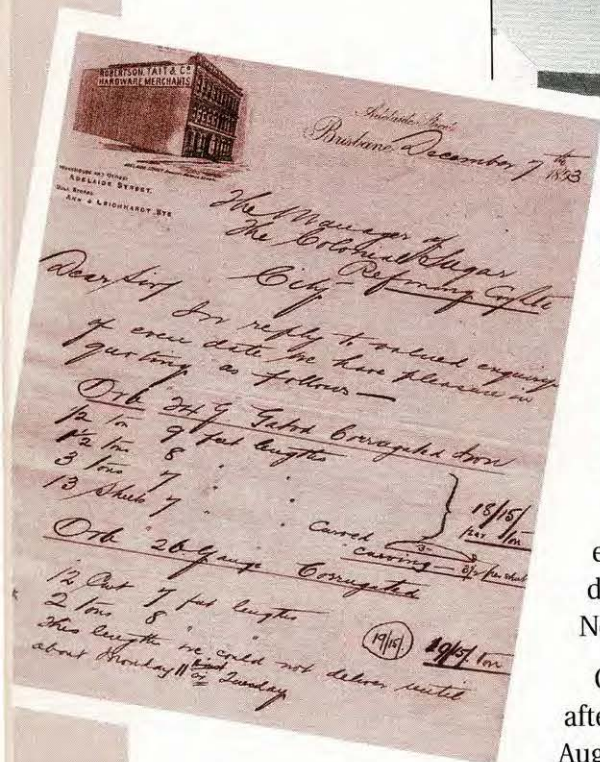
By 1890, Brisbane was Australia's fourth largest city with a population of 100,000 which provided a substantial market for refined sugar.

■ Below: invoice for refinery bricks, transported down river in 1893.



Then and now.

A view of the refinery late last century and below, in the 1990s.



■ Above: invoice for timber for the original construction.

CSR saw the market as strong enough to establish a refinery in Brisbane and took the step of purchasing two and a half acres on the river at New Farm for a cost of £4,300. The site had two particular advantages: ships were able to berth there and it was close to the city.

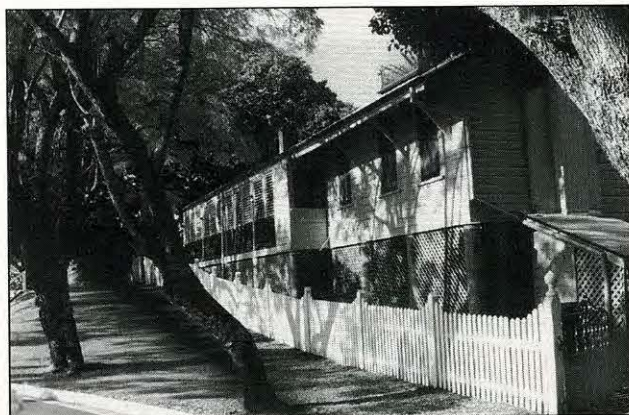
The New Farm complex was designed by James Muir, CSR's chief engineer and the manager of the Pyrmont refinery in Sydney. Muir designed and built the Pyrmont refinery, and the Chelsea refinery in New Zealand.

Construction of the New Farm sugar refinery began in mid-1892 and after delays caused by the big flood of 1893, building was completed by August 1893 at a total cost of more than £100,000.

Politicians' view

Although the actual opening on 12 August 1893 was low-key, a few weeks later a large delegation of state politicians came to visit the new refinery.

The Directors of CSR invited members of both houses of the Queensland Legislature to inspect the new refinery. At 11am, 6 October 1893, the steamer 'Otter' left Queen's Wharf and carried 54 politicians including all eight ministers down the river to New Farm.

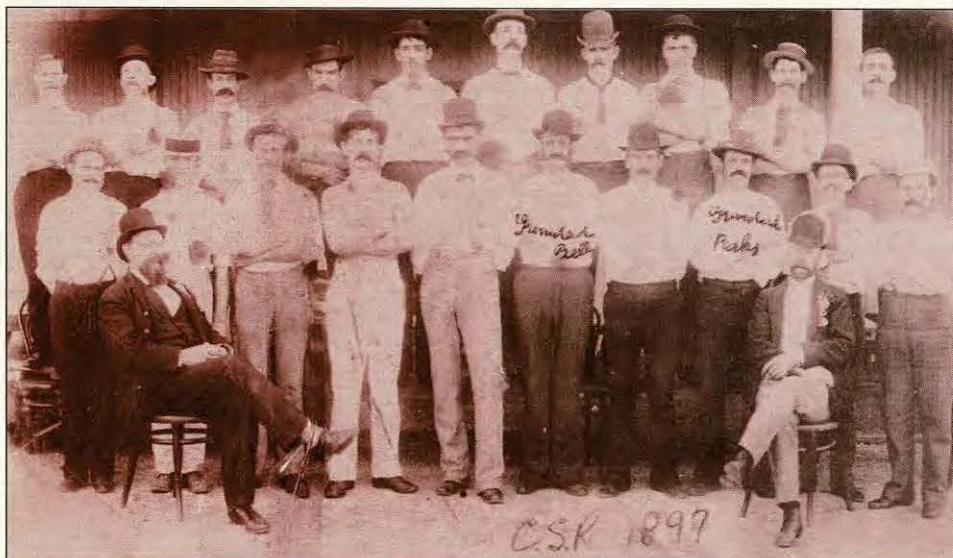


■ One of the properties owned by CSR was the historic residence of 'Amity'.

'Amity' was the name of the first boat to go to Queensland after John Oxley explored the Moreton Bay area. Oxley named Amity Point on Stradbroke Island in honour of the 'Amity'. In 1824, the 'Amity' returned to Moreton Bay with troops and convicts to establish the penal settlement of Moreton Bay.

'Amity' in New Farm was the home of Thomas Welsby.

Built about the same time as the refinery in 1892-3, 'Amity' was used as a manager's residence. It is now owned by the Australian Navy and is the residence of the Naval Officer commanding Queensland.



■ This photograph of a group of workers in 1897 is from the collection of Len Bell who worked at CSR for 40 years.

For the Bells, as for many employees, working at CSR was a family affair.

The handwriting on the photograph identifies two of former CSR employee Len's grandfathers – Grandad Bell and Grandad Parks.

John Bell worked at the refinery from the beginning, as a stone mason on the chimney stack. John's brother Adam worked at CSR on the kiln fires.

In 1912 John's son William, Len's father, started at CSR as an engine driver. His cousin Billy Grieve ran the Tin Shop. Len followed in his father's and grandfather's footsteps, starting at CSR aged 14 years making bags. He had various jobs at the refinery until World War Two when he was asked to train as a sugar boiler.

"It used to take a five year apprenticeship to be a sugar boiler but I had to learn in five weeks. The fellow teaching me had to go to war," Len said.

Len retired from CSR 20 years ago, but he still makes time to visit the refinery.

After inspecting the works, leader of the delegation, the Premier Sir Thomas McIlwraith said he could not speak in too high terms of the enterprise shown by the company in erecting the works.

The sugar industry would be one of the principle factors in bringing about the prosperity that would soon prevail all over Queensland and that would take only a matter of months not of years, he said.

Expansion and growth

To provide room for expansion, in the late 1890s CSR acquired nearby property including 'The Hollins' which became the manager's residence.

That parcel of land was separated from the remainder of the site by Sydney Street. So the company applied to close a section of the street, which it then purchased. By 1910, the refinery occupied nine acres and several new buildings were erected.

The changing face of New Farm

At the time of the refinery's construction, New Farm was a residential area. Houses ranged from small cottages to large villas including homes of Brisbane's social and economic elite. The refinery was the first industrial enterprise in New Farm.



Built in 1901 to overlook the river, the building known as the Brown Room, pictured left, has been getting a facelift in 1993.

The Brown Room was built as a dining and reading room, and has been used for many purposes since, including by the watchman during the 1940s and 50s as an ideal place to keep watch over the refinery. It now houses the library, staff amenities and meeting rooms.

Renovations in 1990 replaced the verandahs and stairs and current work will restore the paintwork to the original colours.

When completed, the Brown Room will be used for meetings and training sessions and as an office for the training coordinator.

Photo taken on 17 March 1932 of CSR workers outside the Brown Room.

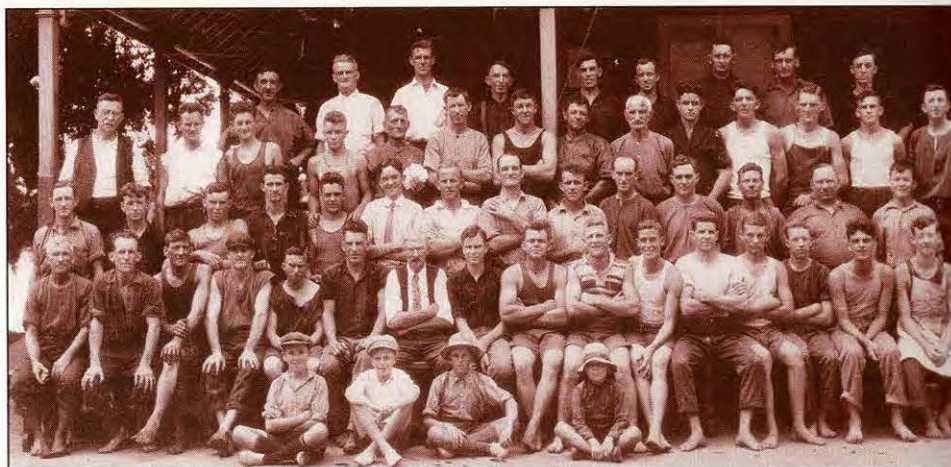
BACK ROW: Crowley (carter), Ruane (watchman), Morrison (carter), Simpson (carter), Rowley (rigger), Houghton (carter), Belz (carter), Petersen (carter), Sim (GS).

THIRD ROW: J Ferguson (foreman), Atkin (sugar boiler), Well (filters), Lusk (Ref Store), Hatton (relief foreman), Bowes (sacks), Gillis (filters), Hackett (carter), Thomas (Ref Store), Hyners R (filters), Dunn (Ref Store), Mayer (Ref Store), Heywood G Jnr (Ref Store), Crouch (Raw Store).

SECOND ROW: Magill E (Raw Store), Baters (Raw Store), Collins (GS), Peet (cleaner), Gilbert S (relief sugar boiler), Bishop (messenger), Swanson J Jnr (Ref Store), Grieve (Tin Shop), Shaw (Tin Shop), Noble (Raw Store), Budgen (Raw Store), Drake (drayman), Davis J (Tin Shop), Gray (bags).

FIRST ROW: Ross (Raw Store), Swanson C (Raw Store), Matthews (greaser), Costar (GS delivery and cooper), Heywood JD (Tin Shop), Brook G Jnr (Raw Store), Manson (Ref Store), McGill (Ref Store), Stratford (Ref Store), Porter (bags), Smith (bags), Donovan (bags), Murray (Laboratory).

GROUND: unknown, unknown, Gemmell L, Crowley.



When construction was completed, CSR approached the Queensland government to extend the city railway network to the refinery. Legislation was enacted in 1895 and the line was built two years later.

The first loads of raw sugar were brought to the refinery by rail in 1897.

With the railway line, the refinery and a growth in shipping activity, more industries and companies were established in the area and by 1910, there was a well-developed industrial sector. Industries such as wool handling, shipping, gas works and a power station were established. Now the area is returning to residential with CSR one of the few major enterprises left.



■ Photo taken of staff at work on 20 July 1993.

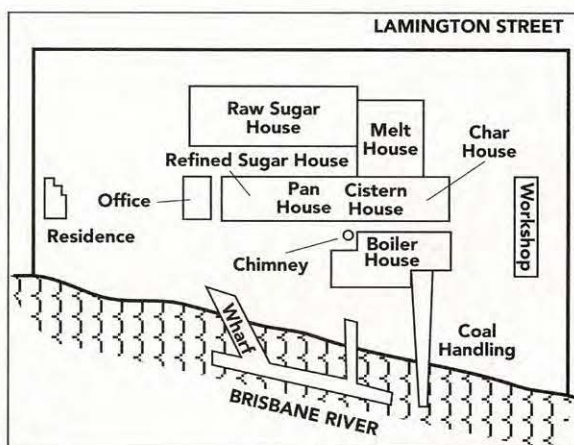
Refining the process of refining sugar

In the first year of production, the CSR refinery at New Farm processed 7,551 tons (7,702 tonnes) of melted sugar. At that time the refinery consisted of the following buildings and equipment:

- Raw Sugar Store, with a capacity to store 8,000 tons of raw sugar;
- Melt House containing weighbridge, blow-ups, bag filters, filter presses, tanks and pumps;
- Char End containing four dryers, four kilns for reviving the char and receiving boxes;
- Cistern House containing two char bins and 12 cisterns;
- Pan House containing receiving tanks, two vacuum pans, two coolers, three centrifugals, four engines;
- Refined Sugar Store, with a capacity to hold 2,000 tons of refined sugar;
- Boiler House containing four Cornish boilers with 40hp capacity;
- two-storey building containing the manager's offices, general office, chemist's laboratory and a room for cutting and sewing hessian bags.

One hundred years later, production is in excess of 100,000 tonnes per year.

■ Right: site plan at the time of construction.



Refining – then and now

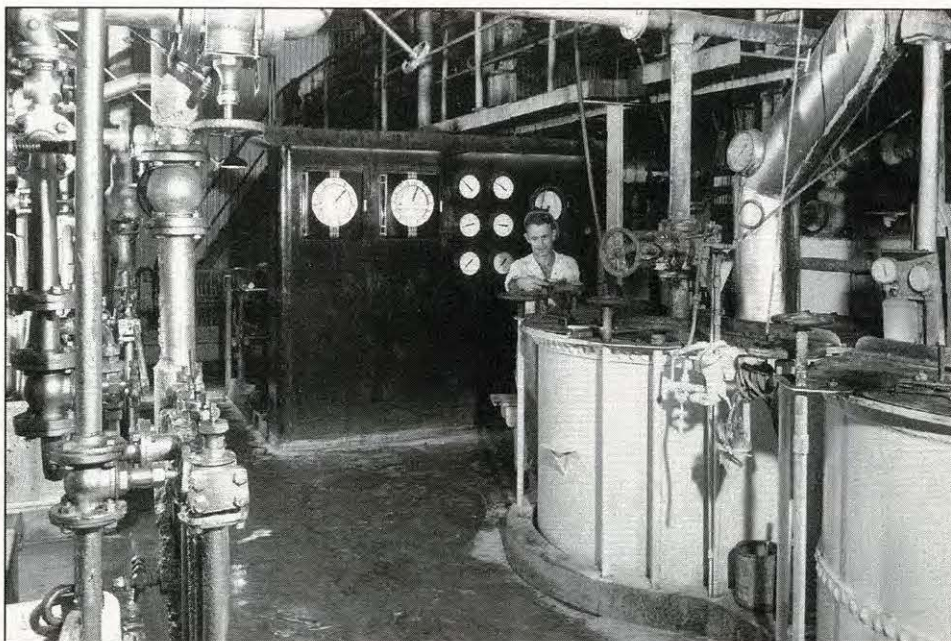
In the 15th century in Venice sugar was clarified by being mixed with lime water and a clearing medium of egg white or fresh bullocks' blood. This solution was heated, forcing scum to rise to the surface. After the scum was scraped off, the liquor was boiled for three quarters of an hour until it crystallised. The sugar was placed in clay cone-shaped moulds allowing the syrup to drain through a hole in the bottom. When the sugar was completely dry, the loaf was taken out of the mould.

After 1800 new technology – including the vacuum pan, the use of char and invention of the centrifugal – revolutionised the refining process.

The mechanisation of refining had important social and cultural consequences. For centuries, sugar was an important mark of social and class divisions. Only the wealthy could afford sugar. With mass production, sugar became more readily available and eventually a staple food.

■ Right: carbonatation tanks. Instrument panel, filters at left, Golden Syrup Press in background. The Filter station. Operator: Fred Manson.

In the carbonatation process, lime is added and carbon dioxide bubbled through the mixture. The impurities cling to a chalk formed by a reaction of the two.

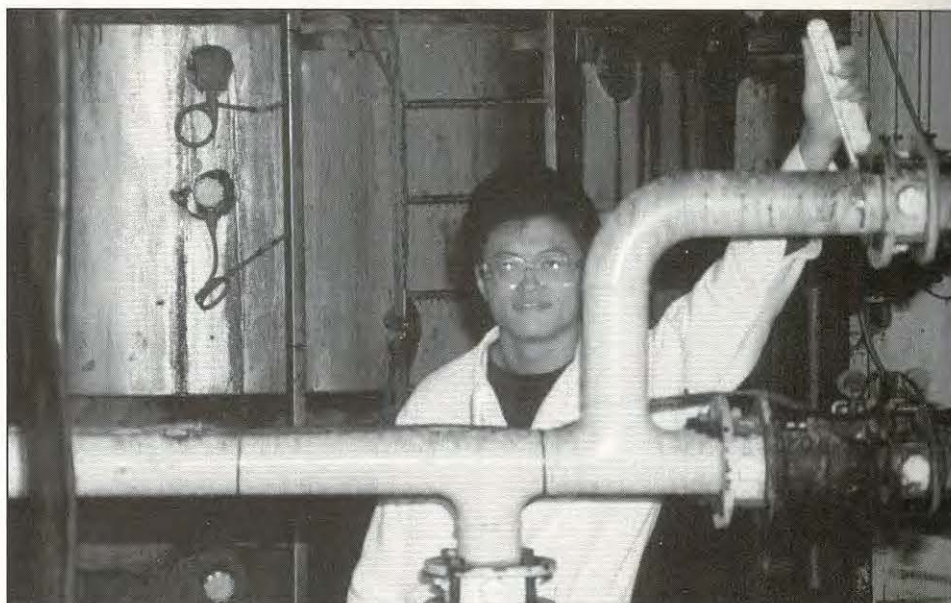


■ The process begins in the Melt House. Photograph taken in 1993. Operator: Bob Zhu.

Raw sugar is mixed with hot concentrated syrup to soften the outer layer of the raw crystal.

The mixture is then spun in high-speed centrifugals which separate the outer layer of impure syrup from the pure sugar crystal.

In the melter, the sugar crystals are dissolved in steam-heated water. The liquid formed is called melter liquor. The sugar in liquid form is then prepared for filtering.



Between 1893 and 1910, the refinery's production increased threefold, partly due to the growth in raw sugar production in the 1890s and 1900s. Production also increased because of demand from the local market.

More land was acquired during this time and several new buildings were erected. The Raw Store was extended and a Hessian Store, Jelly House and tea room were built.

Early in the 1900s, an additional step of affination was introduced into the refining process. Instead of just dissolving and melting the sugar prior to decolourisation, impurities were separated in centrifugals at the beginning of the refining process.

From 1910 to 1940 the refinery steadily increased the output of refined sugar. An extension of the Raw Sugar Store required the realignment of the railway line and Lamington Street. To do this CSR negotiated an exchange of land with the government.

During World War Two, the refinery's output almost doubled, and this growth was assisted by upgrading equipment.

It was during World War Two that carbonatation was introduced, the Taylor-type filters were replaced with Sweetland filters and an additional vacuum pan and drier were installed.

■ The boilers generate the steam which services the whole refining process. Bob Cripps (left) and Des Wilmott. Photo taken 1978.



From 1945 until 1970, the refinery's output continued to grow steadily, apart from a modest decline immediately following the war. During the 1950s the refinery was able to produce more than the Queensland market required so surplus stock was sent interstate.

During this period the most significant innovation was bulk handling which was introduced in the mid 1950s. Bulk handling facilities included a receiving depot, weighbridge, conveying system and a major extension to the Raw Store completed in 1960. In 1961, a new Refined Sugar Warehouse was erected.



■ 48 inch and 42 inch refined centrifugals photographed in 1957. These manually operated refined fugals were replaced with an automatic system in the early 70s. Hessian bags were worn as aprons.

Once the sugar is crystallised in vacuum pans, the mixture is dropped into holding tanks. From there it goes to the refined sugar centrifugals where the white sugar crystals are separated from the syrup.

A 'fugal' is a perforated basket inside a stainless steel casing, something like a high-tech spin-dryer.

Bulk handling coincided with the end of shipping as transport for raw sugar. From the 1960s sugar arrived at New Farm by road or rail.

Since 1970 technical improvements to the refining process have allowed continued growth and an improved product.

Changes during this time included an extension to the raw store in 1973, extensions to the refined store in the late 1970s and the introduction of palletising equipment, bulk storage bins and liquid storage tanks.

One of the major changes in the 1980s was the introduction of granulated carbon as a means of decolourisation as a replacement for bone char.



■ Davie Man repairing the filter cloths by hand. Filter station in background.

After carbonatation, the liquor is pumped to the filter; chambers contain a series of flat circular filter cloths, which keep the impurities on one side while the liquor is forced through to the other side.



■ The maintenance team at work on the "Heart and Lung Transplant" at the Affination Station.

The fugals were upgraded in 1992, in preparation for the change from a five day week operation to a seven day week continuous operation in August 1992.

Australian sugar

The first Australian sugar refinery was established in 1842 by the Australasian Sugar Company at Canterbury nine kilometres from Sydney. The refinery used sugar imported from the Philippines.

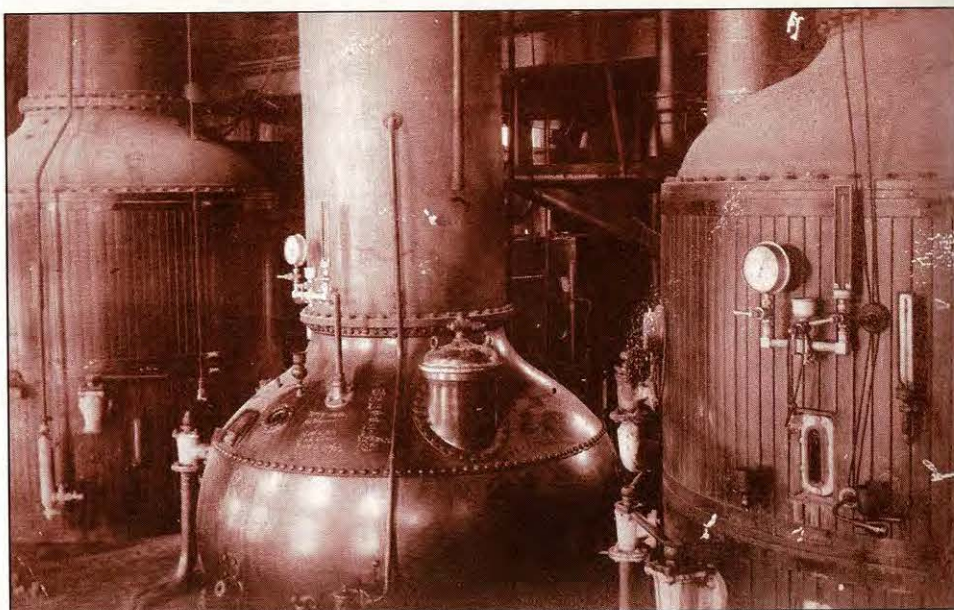
In 1854, the Australasian Sugar Company was dissolved and the following year the Colonial Sugar Refining Company was formed.

CSR began with two small refineries in Sydney but as the volume of locally-grown sugar increased, the company expanded. A refinery in Pyrmont opened in 1878 and remained Australia's largest refinery until its closure in 1992.

CSR's sugar refining activities grew around Australia and in 1893 the refinery was opened in New Farm. By 1930, CSR had a network of refineries in every mainland capital.

With deregulation and rationalisation, there are now three remaining Australian CSR refineries in Brisbane, Melbourne and Perth.

CSR also operates Chelsea refinery in Auckland, New Zealand.



The carbon plant was installed in 1984 and the char kilns were removed although the cisterns remain.

In 1991, the old D-pan was replaced with a new vacuum pan.

The most recent innovation has been the introduction of robot palletisers in 1992. The robots have removed the risk to workers' health from manual handling and dramatically increased efficiency.

■ Top: a photo of the pans installed when the refinery was first built.

■ Right: replacing the old D-pan with a new vacuum pan in 1991.

Vacuum pans are where the crystallisation takes place. They are large steam heated vessels where air can be pumped out to form a partial vacuum. This is done so that the liquor can be boiled at a lower temperature. Boiling at high temperature generates large amounts of colour due to sugar degradation. This is not good when in pursuit of pure white sugar. As water is boiled away the sugar liquor is concentrated and crystals form.

The sugar boiler watches the crystals forming through a special microscope and controls the growth of the crystals to ensure they reach the correct size.



Floods and fire and war— Surviving the hard times



■ A view of Annie Street, New Farm, during the 1893 Brisbane flood. It was the most severe Brisbane flood before the one in 1974. Although the flood disrupted the construction, the refinery was never in danger, being on the raised river bank – higher than the surrounding land.

The history of the New Farm sugar refinery is written in its buildings, which are listed under the 1990 Heritage Buildings Act.

Around the refinery there are signs that CSR has seen its share of natural and unnatural disasters.

From its seemingly cosy position nestled into the crook of the Brisbane river, the refinery has weathered two major floods, two World Wars and a devastating fire.

The evidence is in the flood markers, the fire marks on the buildings and in the names of former employees killed in war service on the company's honour board.

The big floods

The New Farm refinery was born in adversity, with construction on the original buildings set back by Brisbane's second worst flood in 1893. The swollen river swept timber and other building materials from the refinery down the river.

A lot of things were swept down the river that year. A former sugar boiler at CSR, Len Bell, now aged 82 years, has a ladder that his grandfather picked up "floating down the street" in the 1893 flood. Len says it's an oregon pine ladder and still in fine working order.

During Brisbane's worst flood in 1974, the sugar refinery was completely cut off by water.



■ Above: a view of the river at New Farm during the 1893 flood.

■ Below: the 1933 flood with the cricket pitch in New Farm Park underwater.





■ Below: corner of Brunswick Street and Merthyr Road during the 1974 flood.

Remarkably, there was no damage at all to the refinery although one former employee, Bob Isaacs, remembers the 1974 flood causing “a lot of heartache and drama”.

Former CSR manager John Robertson who lived on-site in ‘Amity House’ remembers the 1974 flood as the most dramatic thing that happened during his years at the refinery. He said he couldn’t let his dogs out on to the front verandah or they would have been swept away.

War time memories

The two World Wars touched the working lives of CSR employees in different ways with many refinery employees called up for service in both wars. Although the company couldn’t prevent the call-up papers, they did sometimes arrange for employees to be released from service to return to work.

Some of the lucky ones, (or the unlucky ones depending on your viewpoint), were classed as “essential employees” and exempted from war service; the sugar refinery being part of the “essential services” war list. The refinery’s honour board pays tribute to the 81 employees who served and seven employees who died in the wars.

A close call

■ The Honour Board at CSR shows the refinery workers who went to war in WW1 and WW2.

Former employee, Eric Ingram, recalls relieving in the Bag Room during World War Two and noticing that “all the blokes working outside had disappeared”.

“I asked the chief chemist later where they’d all been and he said there’d been an air raid siren. We knew nothing about it because there’d been too much row from the machinery working inside.”

And it wasn’t a false alarm. Enemy planes had been spotted off Cape Moreton.

“We had the Yankee mothership at New Farm wharf and submarines. They were at guns and everything,” said Eric.

With many of the youngest and fittest workers away at war and the government requisitioning extra sugar for the war effort, those employees left behind were expected to work much harder than in peacetime. The refinery’s output almost doubled during World War Two because the government wanted a six month reserve of essential commodities, including sugar.

When the ships brought the raw sugar in from the cane fields, it was all hands on deck, seven days a week, 24 hours a day, until all the sugar was unloaded.



"You'd spend eight hours doing your own job and then go and do four hours in the Raw Store," said Len Bell.

Trained workers were precious during the war years. Len's father, William Bell, an engine driver, was due to retire when war broke out but the company asked him to stay on for another year. He received a full year's pay for doing so.

Both Jack Tredwin and Bob Isaacs remember Adrian Epps, the manager of the refinery during World War Two.

They recall he had a "gammy arm", apparently an injury from his service as a pilot during World War One. The injury didn't stop him from playing cricket – he was a member of the 1939-40 CSR cricket team (see page 24).

"He was a very strict man and kept protocol spot on," said Bob Isaacs.

"He was a very fair man. I think possibly having been in the services gave him a better attitude, better than the normal attitude in those days."

There were some benefits to the war years, although as Len Bell recalls, you had to be enterprising to enjoy them.

"The army barracks were built behind the refinery, on the park side," said Len.

"Soldiers used to bring home their liquor after a night out. The army guard would stop them and they would dump it near the gate. Our guys would sneak out and pinch it."

Holding back the tide

Over the century, tides and floods have taken their toll on the river wall which rises above the Brisbane River along the length of the refinery site.

It is likely that the wall was built with the refinery in 1893. It needed reinforcement in 1909 after a land slip. A further slip resulted in failure of a 25 metre section in 1931.

In recent years, a 40 metre section of river wall just upstream from the wharf moved about one metre towards the river. Action was taken in 1991 to fix the problem.

With Heritage Commission approval, sheet piles were placed about one metre in front of the old wall. Rock and sand were used to backfill between the old and new walls.

The area was then landscaped and a new picket fence was built. One inch thick hardwood palings had to be specially made to match the old fence.



■ The New Farm sugar refinery had to produce double the usual amount of sugar during WW2 to meet government reserve standards.

■ "1935. Walk in and feel dwarfed by its magnitude, see its history written on brass plaques – 1893 flood level almost shoulder high on the brick wall of the engineer's office. Impressionable stuff for a boy from the bush." – former employee Bob Isaacs.

