Cheetham Salt Works (Former)

Cheetham Salt Works (former), Hobsons Bay Heritage Study 2006

Location

Point Cook Road LAVERTON, Hobsons Bay City

Municipality

HOBSONS BAY CITY

Level of significance

Included in Heritage Overlay

Heritage Overlay Numbers

HO257

Heritage Listing

Hobsons Bay City

Statement of Significance

Last updated on -

What is Significant?

The Cheetham Salt Works (former), established in 1924 and operating until 1990, at Point Cook Road, Laverton.

How is it Significant?

The Cheetham Salt Works (former) is of local historic, technical and aesthetic significance to the City of Hobsons Bay.

Why is it Significant?

Historically, it is significant for its strong associations with Richard Cheetham and Andrew W Cunningham, two important industrial entrepreneurs of the late nineteenth and early twentieth century and reflects their particular vision as well as the firm's expansion in the 1920s and 1930s. Cheetham Saltworks is the only remnant of this once major industry in this area and is now one of only two major saltworks surviving in the State. (AHC criteria A4, B2 and H1)

Technically and Scientifically, it is significant as perhaps the best surviving example in Victoria of an evaporative saltworks that is able to demonstrate the process as it was designed to operate using evaporative pans and manual harvesting, which was pioneered in Victoria by Richard Cheetham and reached its highest level in his Laverton and Geelong works. This is illustrated by surviving fabric and other elements include the evaporative pans, timber sluice gates, timber walled crystallizing pans (partly reconstructed), pumps and pump houses, earth channels and drains, remnants of narrow gauge tramways, workshops and refinery buildings. Although no longer used as an operating salt works the regime of maintaining variable water levels throughout the complex system is still maintained by Parks Victoria in its present role as a wetland environment and hence the original processes can still be interpreted today. (AHC criteria B2 and F1)

Aesthetically, Cheetham saltworks is significant as an evocative cultural landscape which is the result of the modification of the original salt marsh environment to include large still evaporation ponds, a labyrinth network of channels and levee banks covered in mostly indigenous vegetation with some exotic planting such as pine rows.

Heritage Study/Consultant	Hobsons Bay - Hobsons Bay Heritage Study, Hobsons Bay City Council, 2006;
Construction dates	1924,
Hermes Number	22237
Property Number	

Physical Description 1

Summary description

Much of the former Cheetham Salt works site has been redeveloped and the land included in this citation is bounded by Aviation Road on the west, Skeleton Creek on the north and part east, the Altona Meadows estate and MMBW drainage reserve on the north, and Port Phillip Bay on the east and south. Nothing remains within the new housing development south of the creek but there are many remnants in the Skeleton Creek reserve and in the 505ha Cheetham Wetlands reserve north of Skeleton Creek as follows:

- Approximately 81 evaporation pans (clay, mud and sand based, some called Cherry, Explosives etc. after local identities) with associated levee banks, connecting channels, control gates and sluices

- A pump house on the creek with steam driven pump

- A concrete weir and ford on Skeleton Creek. The ford is still used by Parks Victoria.

- Remnants of sand collection tramway from weir to near beach, rails and sleepers on west side of track to Pump house, intact from pump house to beach on bank of creek. The rolling stock from the tramway was sold to the 'Choo-Choo' restaurant at Emerald and had survived as of an inspection in 1999

- A windmill, a weed rake and fence posts from the pre Cheetham era.

- Remnants of the timber tramway bridge across Skeleton Creek and related drains, some with small bluestone abutments.

- Trash racks, distribution pipes and control weirs.

The salt refinery and workshop complex survives on Aviation Road (in the City of Wyndham), but stripped of equipment and in a dilapidated state. Cheetham's main salt works at Geelong still survives with extensive documentation on its construction held at the Geelong Historical Records Centre.

Detailed description

The following information is drawn from the Classification Report prepared for the National Trust of Australia (Victoria) by Gary Vines in 2000. Note: This provides a description of all features associated with the Cheetham saltworks and some may be within the adjoining City of Wyndham.

The Saltworks at its greatest extent is spread over an area of approximately nine square kilometres with most of this ground covered by earth and timber walled evaporation pans and modified natural lagoons. The eastern part of the site downstream of the Skeleton Creek weir, (half of which is in the City of Wyndham) has been preserved as a conservation reserve along with most historic artefacts and structures and the evaporation pints and channels, but the western part (all in Wyndham), originally containing most of the tramway system, the crystalliser ponds and the refinery and works depot, has been redeveloped. The refinery and works buildings are still standing although in a dilapidated state.

The various coding of pans on the Cheetham plans may indicate a sequence of construction. Earlier ones are given alpha numeric codes while the pans north of the creek are named after early landowners, Cropley's, Forsyth's, Tyquin's, Cherry's, etc as well as the Explosives reserve.

The refinery and works buildings comprising a brick two storey factory and warehouse, storage, hoppers, workshops, washing plant, mess building, iron storage shed and remnant pine trees survives in a dilapidated condition on Point Cook Road (Aviation Road) in the City of Wyndham. Much of this has been removed during development works leaving the refinery shell and associated buildings. Cheetham have taken plant and equipment to their Geelong Works.

A series of narrow gauge tramways on hardwood sleepers at about 500mm intervals extended eastward from the refinery between the crystallising pans. An additional loop ran around the raw salt stack site for transporting salt to the refinery and small sidings give access to the workshops and parking areas for empty trucks. The tramways are of metre gauge with hand operated stub points. Rails are 40 pound near the Works Area and 30 pound elsewhere. The lines were originally laid with very light 16 pound rail but little of this remains. The crystallising pans, salt harvesting equipment and associated rails have now all been removed for the new housing development, lakes, golf course and landscaping.

Prior to demolition, just west of the weir on Skeleton Creek the two parallel lines joined at a set of points then a single line crossed a drain and disappeared beneath a mound of earth excavated from the enlargement of a drain on the other side. The drain, built to serve the "Forsyth" area of evaporation pans, was also crossed by a tramway bridge. A third tramway bridge retains only the timber abutments and beyond this there is no trace of the tramway until it reappears about 35 metres beyond the weir. The weir and part of the tramway system survives as it is now in a public open space reserve.

There are remnants of another line that turned south along the right bank of Skeleton Creek to the evaporation basins but this has been disconnected from the main line. This route may have been used to collect gypsum excavated from evaporation basins.

A tramway leading to the beach is known to have been used to collect sand for re-lining the crystallising pans (Evans 1987). Its route can be traced from remains visible in several places. The line probably crossed Skeleton Creek on a trestle bridge before turning north east. Sleepers can be seen in the roadway just east of the weir. A section between the Tyquin No 8 salt pan and the present roadway appears to have been buried by excavated sand from the pan. The line then reappears at a turn where its heads east to the No 1 Pump. Rails and sleepers are visible in several areas along this section. More sleepers are in the roadway just west of No 1 Pump but no

track or bridgework across the channels are visible near the pump. The track originally continued along the north bank of the Skeleton Creek and it has survived substantially intact although overgrown, in a section from about 10 metres east of the No 1 Pump to close to the mouth of the creek.

Refinery

When the saltworks was originally constructed raw salt was collected from the tramway terminus, then north of the present collection lines, and transported by road to the Geelong refinery. Access to the works was by a narrow strip of land connected to Aviation Road. However, by 1940 additional land had been purchased and a complete refinery complex had been built giving Laverton independence from Geelong.

The main section of the works building comprises a brick two storey factory with a single storey warehouse on the west side. A feature of the refinery was the bank of storage hoppers on the north side. This construction was entirely of timber but has now been removed. Four hoppers were supplied by a bucket elevator which lifted salt from a tipping bin below ground level. A conveyor along the top of the hoppers distributed salt while shaker devices under the hoppers fed another conveyor that transferred the salt to the mill.

Inside the mill all of the machinery has been removed. On the northern end of the building there was the washing plant which was a modern compact device which replaced much more complex equipment which was originally installed at several levels. The timber framing and several of the elevators that served this equipment survive and provide the potential for reconstruction of how this process worked.

Beyond the washing area, centrifuges and rotary kilns dry the salt crystals and crushing and sieving plant graded the salt grains. Externally, the refinery and stores are substantially intact. An additional bay for extra warehousing was erected on the south side of the building after 1950.

North of the refinery are the workshops where rolling stock was manufactured and maintained. This originally had a tramway spur entering the building. West of the workshop is the old timber yard that was also served by a tramway in the past. The workshop comprises two buildings, the eastern section being the earliest and possibly relocated from the original salt transfer area north of the crystallising pans and the western part having been transferred from Geelong works in the 1950s.

Waste brine from the washing plant was piped to a treatment plant for precipitating sediments. This comprised three wood stave tanks and a sediment pool that were located north of the refinery.

Other buildings on site include a corrugated iron shed and timber mess building west of the workshops. The mess is all that is left of the accommodation provided for seasonal workers employed during the salt harvest in the early days. A small galvanised iron storage shed stands between the mess and workshop. In what is now the carpark adjacent to the mess, lines of pine trees and decorative stone borders mark the location of about 8 small huts.

Of the 12 or more larger houses built around the refinery, only two survive on Aviation Road near the original site access road. Most of these houses were constructed in the 1940s and 1950s but not demolished until the last 5 or 6 years.

Bulk raw salt is stored in the open adjacent to the mill. Travelling conveyors feed salt to the stack from a tumbler, which inverts the railway trucks to empty them.

Tramways

The Melbourne sheet of the 1930s series of topographic maps of Victoria shows the tramways extending south from a road that connects with Aviation Road. Three branch lines extended eastward between the crystallising pans. These are still in use but have been altered to link them to a tramway to a longer double track section running to Skeleton Creek. The original feeder line was closed and dismantled in the late 1930s when the refinery was constructed and connect to the tramway network. An additional loop runs around the raw salt stack site for transporting salt to the refinery and small sidings give access to the workshops and parking areas for empty trucks.

The tramways are of metre gauge on hardwood sleepers at about 50mm intervals with hand operated stub points. Rails are 40 pound near the Works Area and 30 pound elsewhere. The lines were originally laid with very light 16 pound rail but little of this remains. Rust has caused the rail to be replaced much sooner than would

normally be required with the degree of use and wear experienced on the tramways. In several areas prefabricated sections of track have been used which employ press iron sleepers bolted to 4 metre lengths of rail. Several sections of this track, including some prefabricated points are stacked near the "West Junction". These portable tracks were used to provide temporary access to the salt stacks for loading trucks to the mill. One of the side tipping hopper trucks is also located in this area.

Transfer Site

From 1924 to about 1940, salt harvested from the crystallisers was delivered by rail to a transfer site on the old access track. The route of the tramway can be traced along the old permanent way between the crystallising pans. All that is left of the structures in this area are a concrete foundation, probably for an engine, and six concrete piles on the edge of a drain. A timber walkway across the drain is probably of more recent origin. The arrangement of equipment of buildings in this area is unknown apart from there having been a building of some kind in the south east corner of the track - tramway junction, i.e. near the six piles. This we know from the 1930 ordinance survey map.

West Junction

The principal line from the refinery to crystallising pans diverges into three branches about 300 metres east of the refinery. The central line runs between the pans and continues to Skeleton Creek. The north line loops around the pans to rejoin the others at the "East Junction" while another loop does the same to the south. A large section of the southern loop has been dismantled in late 1989 at its western end. These rails are intended for re-use elsewhere on the site. Two sets of points located about 20 metres apart give access to the three lines.

East Junction

In this area the lines around the crystallising pans converge and join with the twin tracks leading to Skeleton Creek. Various turnouts allow trucks to be shunted between lines, suggesting that the northern line was used as a siding for idle trucks. An interesting feature of this area is the small tramway bridges across the brine channels that have had board walks built over them to allow hand and horse working.

Tram End

Just west of the weir on Skeleton Creek, the intact portion of the tramway network comes to an end. The two parallel lines join at a set of points then the single line crosses a drain and disappears beneath a mound of earth excavated from the enlargement of a drain on the other side. This drain, built to serve the "Forsyth" area of evaporation pans, is also crossed by a tramway bridge. A third tramway bridge retains only the timber abutments and beyond this area is no trace of the tramway until it reappears about 25 metres beyond the weir.

There are remnants of another line that turned south along the right bank of Skeleton Creek to the evaporation basins, but this has been disconnected from the main line. This route may have been used to collect gypsum excavated from evaporation basins. A 1951 photograph clearly shows the gypsum raked into heaps either side of the tramway.

Sand Collection Line

A tramway leading to the beach is known to have been used to collect sand for re-lining the crystallising pans (Evans 1987). Its route can be traced from remains visible in several places. The line probably crossed Skeleton Creek on a trestle bridge before turning north east. Sleepers can be seen in the roadway just east of the weir. A section between the Tyquin No. 8 salt pan and the present roadway appears to have been buried by excavated sand from the pan. The line re-appears at a turn where it heads to the No 1 Pump. Rails and sleepers are visible in several areas along the section. More sleepers are in the roadway just west of No 1 Pump but no track or bridgework across the channels are visible near the pump. The track originally continued along the north bank of the Skeleton Creek and it has survived substantially intact although overgrown, in a section from about 10 metres east of the No 1 Pump to close to the mouth of the creek.

No 1 Pump

The main pump from the salt works is situated on the north bank of Skeleton Creek as a point that appears as the head of a delta in aerial photographs. This delta is natural but has been modified as a consequence of

construction of artificial channels for directing sea-water to the pump, and for distribution of brine to the salt pans. Parallel with the access road on the south side are the remains of a tramway that has been dismantled or buried for much of its length. Wooden sleepers are buried in the roadway about 10m metres west of the pump house.

The present arrangement for the pump involves a vertically mounted centrifugal pump raising water from an intake pit connected to the creek via a straining well. The outlet from the pump is into a wooden box with sliding gates controlling the distribution of water into two 18" diameter pipes. The northern outlet pipe feeds a channel on the other side of the roadway and the longer southern pipe crosses Skeleton Creek on a pile bridge and empties into a small pond that appears to have been designed to reduce the force of water entering evaporation ponds. A sluice gate regulates water flow between the intake channel and Skeleton Creek.

The present power source for the pump is a three-phase electric motor but it was originally powered by an oil engine similar to that which survives at the No 2 Pump site. The concrete foundations for the engine are located just outside the pump shed on the north side and bolts indicate the location of the engine assembly and the flywheel and pulley bearing mounts. A fibro-cement pipe crosses above the foundations indicating it post-dates the replacement of the engine with the electric motor.

The pump house is of light frame hardwood construction clad in corrugated galvanised iron. It has a single door on the west side and no windows. The roof is gabled with the southern half raised to clear a crane rail. The crane rail extends from above the electric motor and pump through the building wall and over the water intake pit. This crane was clearly built to facilitate dismantling and maintenance of the pump and motor and could be associated with clearing of the trash rack.

No 2 Pump

The only surviving engine from the original pumps is located on the No 2 Pump site. The single cylinder four-stroke gas engine has external valve gear and a 5 foot diameter fly wheel. These engines were commonly used by Cheetham before electrification of the pumps but were replaced early in the history of the works.

The engine and crankshaft bearing are mounted on concrete blocks similar to those at the No 1 and No 3 Pump sites. The engine is in a very poor state, missing some parts, is rusted and evidently seized. The drive for the pump was via a flat belt and pulley on the end of the crankshaft. The centrifugal pump is located outside of the building and is mounted above an intake pit connected to a channel that collects water from evaporation pans. Above the pump is a wooden box where the brine is distributed to three wooden chutes and controlled by sliding gates. A three-phase electric motor is now used to drive the pump. To the west of the engine house is a tank stand with a collapsed wood stave water tank probably used for cooling water for the gas engines.

No 3 Pump

The purpose of the No 3 Pump was to raise the concentrated brine for distribution to the crystallising pans. This was achieved using a similar gas engine and centrifugal pump to that installed at the No 1 and No 2 Pump sites. Like the other sites, the engine was replaced with an electric motor and now only the concrete foundation of the engine remains. It has been removed with the redevelopment of this area.

The centrifugal pump within a timber-framed shed clad in timber, corrugated iron and fibro-cement sheeting. A wooden collection box above the pump can be used to direct brine to a wooden channel, to the crystallising pans or to deep storage "Reeves".

An additional wooden channel with a second pump has been installed south of the pump house to recirculate brine to the evaporation pans indicating the development and elaboration of the system in more recent years.

The distribution channel uses fibro-cement spoon drains elevated on timber trestles running between the crystallising pans. It crosses under the tramway via a siphon.

The No 3 Pump was demolished in the 1990s to make way for the housing estate, but it is believed components including flumes and weirs were retained for re-instatement at the reconstructed crystallisers in the Parks Victoria controlled area.

House Site

The site which was located on the north back of Skeleton Creek near the concrete weir, also appeared on the 1930 ordnance survey maps and is today marked by exotic plants, mainly boxthorn and a single cypress tree. The 1:2500 MMBW base map indicates the site is within the Cheetham Salt owned property although their own plans show the property boundary to the south.

A diffuse scatter of cultural material, bricks, timber, broken glass and crockery, etc indicates considerable disturbance of the site. This house was probably built for use of brine controllers and was also demolished by 1951. Boxthorn was planted as a fence just north of the house but was cleared in early 1990.

Nearby is an unusual pipe made from sections of flanged cast iron riveted together. A gate valve is at one end and it appears to have been associated with pumping brine from the higher levels. It has been out of use for many years.

Other historical features including the No 2 Pump house and various flumes, sluice gates and other sections of tramway survive in the City of Wyndham area of theWorks. Parks Victoria maintains the conservation area, and continues to use the pumps and channels to keep the water levels up for maintaining bird habitats.

Integrity

External Integrity

The surviving salt pans are being maintained by Parks Victoria and have a moderate level of integrity, however, the overall integrity of the site is low as most of the buildings, machinery and equipment have been removed.

Physical Conditions

External Condition

The surviving salt pans are in good condition and are being maintained by Parks Victoria, including the regime of managing water levels. However, the refinery is derelict and stripped of equipment, much of the salt crystallising and harvesting area has been filled for housing development.

Physical Description 2

Context

Set on low wetlands of the coast, near the former Point Cook hunting lodge and west of the former Laverton explosives reserve. The site of the refinery is now isolated from the surviving salt pans on the edge of a house development.

Historical Australian Themes

Manufacturing and Processing

Physical Description 3

Associations

Thomas Chirnside, Richard Cheetham, Andrew Cunningham, Cheetham Saltworks Pty Ltd, Melbourne Parks and Waterways, Parks Victoria