



REGISTER OF HERITAGE PLACES - ASSESSMENT DOCUMENTATION

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

The criteria adopted by the Heritage Council in November, 1996 have been used to determine the cultural heritage significance of the place.

PRINCIPAL AUSTRALIAN HISTORIC THEME(S)

- 3.3.3 Mining

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 108 Government policy
- 303 Mining (incl. mineral processing)

11.1 AESTHETIC VALUE*

State Battery, Coolgardie is highly valued by the Coolgardie community as an identifiable cultural environment associated with the history of the Coolgardie goldfields. (Criterion 1.1)

State Battery, Coolgardie is an industrial site, comprising gold processing equipment and buildings, on the outskirts of, and overlooking, the town of Coolgardie. It is a landmark, viewed from the town, and on the road south out of the town, and contributes to the townscape and goldfields character of Coolgardie. (Criterion 1.4)

11.2 HISTORIC VALUE

State Battery, Coolgardie was constructed as a direct result of the establishment of the Coolgardie Goldfields in the 1890s. The site is valued by the community of Western Australia for its strong association with Coolgardie, a town that has played an important role in the history of the State. (Criterion 2.1)

State Battery, Coolgardie is illustrative of State Government policy to provide ongoing financial assistance to the development of the mining industry in Western Australia in the 1890s and the early 1900s, in this case by way of the establishment of gold ore batteries. (Criterion 2.2)

State Battery, Coolgardie has operated continuously since 1904, providing valuable assistance to small miners and prospectors on the Coolgardie Goldfield. (Criterion 2.2)

* For consistency, all references to architectural style are taken from Apperly, R., Irving, R. and Reynolds, P. *A Pictorial Guide to Identifying Australian Architecture: Styles and terms from 1788 to the present*, Angus & Robertson, North Ryde, 1989.

11.3 SCIENTIFIC VALUE

State Battery, Coolgardie provides evidence of the industrial processes of gold extraction and the technological changes that have taken place over the years to facilitate this continued function. (Criterion 3.2)

11.4 SOCIAL VALUE

State Battery, Coolgardie is highly valued by the local and wider community for its association with the district's gold boom history and ongoing association with gold mining in the area. (Criterion 4.1)

State Battery, Coolgardie contributes to the community's sense of place as a significant site of interest connected with the gold mining history of the area and as a landmark. Its significance is evidenced by its interim listing on the State Register of Heritage Places. (Criterion 4.2)

12. DEGREE OF SIGNIFICANCE

12.1 RARITY

State Battery, Coolgardie is one of only four remaining State Batteries still in operation that were established in various goldfields throughout Western Australia. (Criterion 5.1)

12.2 REPRESENTATIVENESS

State Battery, Coolgardie and associated elements is a representative industrial building form associated with the goldmining industry. (Criterion 6.1)

State Battery, Coolgardie and associated elements is one of the few remaining operative examples of a State Battery in the goldfields of Western Australia. The place demonstrates changes in fabric and equipment that have resulted from the continued function of the place from 1904 to 2001. (Criterion 6.2)

12.3 CONDITION

State Battery, Coolgardie is in fair condition. The place is maintained on an as needed basis.

12.4 INTEGRITY

State Battery, Coolgardie has operated since 1904 and has retained a high degree of integrity.

12.5 AUTHENTICITY

The place shows some evidence of changes to the fabric over time. Despite that, the place displays a moderate to high degree of authenticity.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Irene Sauman, Historian. The physical evidence has been compiled by Laura Gray, Conservation Consultant.

The curtilage for *State Battery, Coolgardie*, comprises the whole of Reserve 9435.

13.1 DOCUMENTARY EVIDENCE

State Battery, Coolgardie, situated on Reserve 9435, was opened in June 1904. The place has had various additions and changes over the years. In 1987, *State Battery, Coolgardie* was leased to the WA Mint and Gold Corporation. In February 2001, it is sub-leased to a private operator.

Prior to gold discoveries in the 1890s, mining in Western Australia was under the control of a Secretary for Mines responsible to the Commissioner of Crown Lands. In 1894, the Department of Mines was formed, and the Public Batteries Branch was opened under the control of a Superintendent of State Batteries. The first State batteries were set up in 1898, to process gold ore. Between 1899 (when mining production increased by 57%) and 1902, the Government formalised and increased its direct assistance to mining. The Mining Development Act 1902, provided for the establishment of batteries, assistance with development of mines, and even exploration of untried country. Mining was considered 'a source of prosperity, not only for the artisan and the trader, but to every inhabitant of the State'. State batteries were to provide crushing, dressing, cyanide or smelting treatments where these facilities were not available 'at a reasonable rate', or where they were deemed necessary for the development of mining.¹

By the end of 1903, there were 16 State batteries (seven with cyaniding plants), one tin dressing plant, and one Huntington mill in operation in Western Australia. There were also numerous privately owned mills, cyaniding plants, etc, operating at the larger mines. In the Coolgardie district there were 16 privately owned milling and cyaniding plants, and one State battery at Widgiemooltha.² Some of the privately owned batteries crushed for the public, but this was not always convenient for either party. In areas where the Government had not established a State battery it sometimes took batteries on lease. The 1903 Department of Mines Annual Report stated:

There were several batteries in various parts of the Coolgardie district which crush for the public and for some time past one or other of these has been taken on lease by the Government. After much consideration of the strong representations of the prospectors of the district, the erection of a State Battery and cyanide plant was at last decided upon, and since the close of the year this has been erected in a central position near the town. The establishment of this battery will now give prospectors confidence to go on working, knowing that crushing facilities will be available when they have a parcel taken out. Hitherto there has usually been a good deal of uncertainty on this point, as the privately-owned mills crushed for the outside public or not, just as it suited them.³

Another reason for erecting a State battery at Coolgardie at this time was the now reliable supply of water due to the opening of the goldfields pipeline in 1903. Water was a constant concern in the treatment of ore, as large amounts were needed for most processes:

Considerable trouble has been experienced at many of the batteries in regards water supply. Although ample at commencement of a battery's operations, it frequently runs short, requiring deepening water shaft or extending drives to add to supply.⁴

¹ Spillman, K. A, *Rich Endowment: Government & Mining in Western Australia 1829-1994*, (published to commemorate centenary of Dept. of Minerals & Energy) Perth, UWA Press, 1993, pp. 122 &148. Quotations in paragraph are from the Mining Development Act, 1902, found in this source.

² Department of Mines Annual Report, 1903, p. 24.

³ *ibid*, 1903, p. 60-62.

⁴ *ibid*, 1903, p. 24.

In 1904, there were four State batteries in course of construction, among them *State Battery, Coolgardie*.

The Coolgardie 10-head plant, the manufacture of which was entrusted to local people, was erected and started to crush in June, while the cyanide plant erected at the same time was first cleaned up in September.

The plant consists of a new 10-head battery and all accessories manufactured by Perth firm Messrs J & E Ledger; two Cornish boilers by Cowley & Co, of Ballarat; compound condensing engine, by Thompson & Co (second-hand); two Phoenix weir concentrators; Berdan pan; cyanide plant complete, with four leachers; six settlers, sumps, etc; tailings wheel for delivery of sands to settling vats. The battery is very complete, and is supplied by water from the Coolgardie Water Scheme. Since starting the plant has crushed to the close of the year 4,111 tons for 3,856ozs., while the cyanide plant treated 949 tons for £1,060.⁵

State Battery, Coolgardie cost £4,715.04.0 to establish. This was the largest amount spent on a new battery in 1904. The amount of £490 was spent on the purchase of water for the first six months of operation.⁶ Reserve 9435, on which *State Battery, Coolgardie* is situated, was gazetted on 31 March 1905. Originally some 19 acres (7.87 ha) in size, it was enlarged in 1940 to 41 acres (16.6 ha).⁷

There was a lot of justification of the cost of State batteries in the early years, as they were not a profit-making venture.

It is generally concluded that State Batteries have done a great deal towards opening up new goldfields in the state and enabling prospectors to make a living, and sometimes a competence, in places where under other conditions this would have been impossible; they have also in a few cases led to the opening up of what promise to be permanent mines. When the system was first initiated it was supposed that the batteries would enable reefs to be thoroughly tested, and that once tested the owners would erect their own mills. Though this object has been attained in a few cases, the majority of the State Batteries are regularly used by the miners in the surrounding district for crushing their ore. They are in fact 'custom' works, and do the work that in most other countries is undertaken by private enterprise.

From a commercial standpoint, the battery system cannot be said to have been a great success; but it does not therefore follow that the expenditure has not been of great indirect benefit to the State. At the same time, it is open to argument whether when a battery has ceased to be a testing plant and has become a 'customs works' the charges should not be framed on such a scale as to cover working expenses and upkeep, and reasonable amount of depreciation.⁸

In 1906, the State Batteries Inquiry Board reported unfavourably on the management and costs of the State Batteries system. The result of the report, however, was a general recognition that 'provision of crushing and extraction facilities to the public was first and foremost a form of State aid to mining, with profitability of secondary importance.'⁹

By 1913, there were 40 State batteries in operation, three of which were leased by the Government. Treatment of tailings was introduced that year, and a second-hand cyanide plant was purchased and renovated for *State Battery, Coolgardie*. Large tonnages were crushed at *State Battery, Coolgardie*, Youanmi, and Wiluna.¹⁰

5 Department of Mines Annual Report, 1904, pp. 102-103.

6 *ibid*, 1904, pp. 109 & 111.

7 Reserves index enquiry.

8 Department of Mines Annual Report, 1904, p. 27.

9 Spillman, K. *op cit*.

10 Department of Mines Annual Report, 1913, pp. 55 & 64.

By 1921, the number of State batteries had been reduced to 29, three of which were operated by lessees. Overall the tonnage milled was only sufficient to keep the batteries operating about 17% of the time. The largest crushings were at Wiluna (7,204 tons) and Coolgardie (6,804 tons). The next largest was at Cue (3,275 tons). Idle plants deteriorated rapidly and the outlook for the batteries did not look bright. Increase in the cost of wages added one shilling and sixpence per ton to the cost of processing, and the market price for base metals was weak, resulting in lack of use of the ore-dressing plant at *State Battery, Coolgardie*.¹¹

There was an upturn in operations in 1930. Treatment costs were down and tonnages were up. *State Battery, Coolgardie* was one of only two ten-head mills still operating, compared to fifteen five-head mills. Eleven plants treated tailings during the year including *State Battery, Coolgardie*, which crushed 7,173 tons of ore for 5,362 fine ounces of gold at a total value of £19,306, and a loss of £894 on milling and £369 on tailings.¹²

In 1947, there were still 21 State batteries in operation. All batteries were suffering from long idle times, and staff were moved from one battery to another as work became available. Labour was difficult to obtain and wages were high with the introduction of the 40 hour week and increase in basic wage. In 1947, *State Battery, Coolgardie* was second highest producer, after Kalgoorlie, which was a relatively new battery.¹³

In 1970, there were 14 State batteries, but interest in gold production was low. *State Battery, Coolgardie* crushed 3,966 ton of ore for 1,076 fine ounces of gold. Less gold was being extracted per ton of ore crushed.¹⁴

In February 1987, the State Batteries Branch of the Mines Department was closed and all existing batteries were transferred to the control of the Perth Mint and Gold Corporation on a twenty-one year lease.¹⁵ In 1989, *State Battery, Coolgardie* was sub-leased to a private operator, and in February 2001, this situation is ongoing.

13.2 PHYSICAL EVIDENCE

State Battery, Coolgardie is located within a crown reserve, at the south end of Battery Road, which comes off the Coolgardie Esperance Highway several hundred metres east of the Great Eastern Highway, on the eastern outskirts of the Coolgardie townsite. The group of buildings is located on a hilltop, surrounded by undeveloped natural landscape, except for the tailings ponds.

Battery Road is a gravel and blue metal road that extends into a track that leads past a recent dwelling on the left (north east) before branching to the south. Continuing east, the weighbridge is on the left side of the road, and the road sweeps south to access the loading ramp and conveyor, which are located to the left of the road. Various sheds are situated on the right of the road. The road ends in front of the battery building. A number of other buildings are located to the east of the battery building.

The weighbridge building is located on the north side of the access road. It is a single storey timber framed and corrugated iron clad shed with a skillion roof. There is a doorway opening on the west end, and a window opening

11 Department of Mines Annual Report, 1921, p. 57.

12 Department of Mines Annual Report, 1930, pp. 20-22.

13 Department of Mines Annual Report, 1947, pp. 41 & 44.

14 Department of Mines Annual Report, 1970, n.p.

15 Reserves index enquiry.

on the south side where the weighbridge is located. The original steel scales are located within the shed, bolted onto a plinth on the concrete floor.

The ore is run up a banked rise, retained by boarded corrugated iron on the west side. The ore is dumped into two steel sided coarse ore bins and sieved through into the chutes and the jaw crusher below. The pit at the base of the steel chutes houses the machinery to operate the rubber conveyor pulley that transports the ore to the battery building. The conveyor is elevated on a steel frame and is clad with vertical sheets of corrugated iron on the on the west side, and the roof, but open on the east side. It connects to the top of the battery building, above two steel chutes into which the ore is deposited.

The battery building, a two storey high structure, dominates the site. The building is timber framed and clad with horizontal sheets of corrugated iron. The roof is gabled and also clad with corrugated iron. The building is accessed on the west side, where there is a double steel door entry, and on the south side. There are minimal openings except for the north side where the steel frames of the battery platform are located, and where the conveyor connects.

The two five stamp battery boxes are located on the north side of the building, adjacent to the two steel chutes below the conveyor belt inlet. Two levels of timber boarded steel framed and railed platforms give access to the north side of the batteries, and the pulley wheels each side.

From the conveyor, the ore is deposited into two fine ore bins, and feeders load the ore into the battery boxes where the stampers crush it. Through the battery crushing process, water is added and the resulting slush flows over the lip plate and onto the table. The lip plate has a mercury content to pick up the gold in the slush. The slush is screened over the table to further separate the gold from the ore. The resulting slush drains to another chute, and samples are taken to confirm that all the gold has been extracted. The trough, located near the table, picks up the concentrate and controls the flow of the slush. The surface slush is drained from the chute through a pipe to the exterior of the building where a large steel cable cone further separates whatever gold may still be in the deposits. From there, the water is recycled back into the system via several dams, or settling ponds, to the west of the group of buildings. The tailings ponds are located to the south.

East of the battery building are a number of sheds, tanks and structures. The buildings are single storey timber framed and corrugated iron clad with skillion and gable roofs. On the south side of these buildings is a steel-meshed enclosed area with more ore crushing equipment comprising a circular steel bowl with a solid steel ball. The wire mesh enclosure is under a timber tank stand with two rusted corrugated iron circular tanks at first floor level, and another square steel tank at a lower level. Further east are two vertical steel tanks and an adjacent corrugated iron clad lean-to shed.

North of the battery building, east of the conveyor, are a group of three small brick buildings. Each is constructed in a stretcher bond, which has been painted over. The most intact, with a gable corrugated iron roof and gable infill, is on the east end. The other two have skillion roofs. Behind them, on the north side is a two-storey-height skillion roofed machinery shed. It is timber framed and clad with horizontal sheets of corrugated iron, and has a concrete floor.

West of the battery building are a group of recently constructed sheds, transportable buildings (comprising office and toilets), the corrugated iron clad gold room, and a small lean-to with the original wood saw still in place and operational. The gold room shows evidence of a number of fires, and steel mesh over the louvred windows attests to the security issues associated with the building.

State Battery, Coolgardie is in fair condition. It has been used since 1904 as an operative gold battery and although change has taken place to facilitate its continued function, there has been relatively minimal intervention to the original fabric. The place has retained a high degree of integrity and moderate to high degree of authenticity.

13.3 COMPARATIVE INFORMATION

13.4 REFERENCES

13.5 FURTHER RESEARCH

No plans for *State Battery, Coolgardie* were located at SRO or Minerals and Energy, although there should be other information available in Minerals and Energy files, located at their archives at 19 Catherine St Bentley. The contact there is Frank de Cinque (pronounced d'sink), in Records.

Information regarding changes in types of power used, eg, steam, gas, oil and electricity, was not located, but could also be available in Minerals and Energy files.

There are four State batteries still in operation and leased to private companies and individuals. Comparative information about these places is an area of further research