

# ELECTROLYTIC ZINC WORKS

**Location:** At Lutana in Glenorchy

**Owner:** Nyrstar.

The marker is located in the barbecue area near the main office

## The Works

The Zinc Works was established in 1916 when the facilities for processing zinc ore in Europe were cut off by the World War I, leaving Amalgamated Zinc with an enormous stockpile of high-zinc ore at Broken Hill.

The company was attracted to the site at Risdon by the supply of affordable power from the Waddamana hydro-electric Scheme, the availability of land, access to deep water for a port and a pool of workers to build and operate the plant.

Key people included James Gillies who started development of the Waddamana Power Scheme, William Baillieu who founded the company, Herbert Gepp, the first General Manager, Conrad Snow, Chief Chemist and later General Manager, and Sir Ian Wark who discovered a fundamental relationship between the relative amounts of zinc and acid in an electrolytic cell.

## Heritage Significance

- Its establishment in 1916 was a pioneering achievement; the Hobart plant was the first electrolytic zinc plant in the Southern Hemisphere and an early example worldwide.
- The plant has been providing productive employment for almost 100 years and is one of the world's most efficient zinc producers.
- Technical innovation has been essential in the metallurgical processes to remove troublesome impurities in sulphide ores from different sources.
- Enlightened management provided housing, insurance and a cooperative store for employees in the early days of the plant.



Note:  
Interpretation Panel on next page

**Electrolytic Zinc Works**

# Interpretation Panel

## ELECTROLYTIC ZINC WORKS Founded 1917



### GETTING STARTED

Industry was lured to Tasmania following the construction of the Waddamana Power Scheme by the Hydro Electric Power and Metallurgical Company in 1915. Offering power at low cost proved highly attractive to large consumers including those using electrolysis to produce metals.

Historically the Broken Hill companies primarily sold zinc concentrates to Germany and Belgium, however when Germany overran Belgium early in World War I, the market diminished. With the Western Allies producing very little zinc necessary for manufacturing armament, the demand elevated the price significantly creating an attractive zinc production investment opportunity.



### THE ELECTROLYTIC PROCESS

The process used at Hobart is known as a Roast-Leach-Electrowin, and is typical of zinc plants using zinc sulphide concentrates.



#### Roasting

Concentrates are burnt in air to produce oxide zinc oxide (Calcine) and sulphur dioxide

#### Leaching & Purification

Calcine is dissolved in a diluted sulphuric acid, the resulting solution is then purified

#### Electrowinning

Electric current is used to plate out the zinc on aluminium cathodes and produce diluted sulphuric acid. The acid produced is used in the leaching stage.

#### Casting

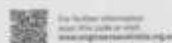
The Zinc is removed from the cathodes and melted into various market ready products



### CONSTRUCTING THE WORKS

The Electrolytic Zinc Company was formed in 1916 through a consortium of Broken Hill companies. The plant grew from a small-scale test unit in 1916 to a larger unit in 1917 before becoming a 100 tonne per day operation by 1921.

Over the years the plant has been expanded and modified to increase production to the current levels.



Engineering by Agge, Marshall, Wheeler  
Completed on 15th April 1917



### IMPORTANT PEOPLE



**James Gillies**  
Gillies was the entrepreneur behind the construction of the Waddamana power station, built specifically to make zinc. Establishing the foundations for the electrolytic works, Gillies is referred to as the Father of Tasmanian industry.



**Herbert Gepp**  
The first General Manager of the Electrolytic Zinc Company Gepp steered the business through turbulent beginnings, presenting technical challenges. Gepp was very community minded and instrumental in establishing employee benefits, including the housing scheme.



**William Ballieu**  
Ballieu was confident of the company's success and influential in its establishment. When the company was publicly listed during the Great Depression, he put his family fortune on the line to underwrite any share issues.

### COMMUNITY BENEFITS

Community minded values were reflected through internal initiatives including an insurance scheme with employee houses established at Lutana and a Co-operative Council founded providing supplies including firewood and meat at low cost.

The flow in economic benefits to the broader Tasmanian community has been significant through the wages bill and contribution to the gross state product as a leading exporter and employer, attested to by the number of people who know, or have known, someone associated with the zinc works.

