APPENDIX 2 PORTLAND CEMENT WORKS CONSERVATION MANAGEMENT PLAN

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Portland Cement Works

Conservation Management Plan

Final

AWJ Civil

19 December 2017

Document control

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Locations

Sydney
Central Coast
Illawarra
Armidale
Newcastle
Mudgee
Port Macquarie
Brisbane
Cairns

Cover photograph: Portland Cement Works former processing area, facing south east

Executive Summary

Niche Environment and Heritage (Niche) was commissioned by Catalyst Project Consulting Pty Ltd on behalf of AWJ Civil Limited to prepare this Conservation Management Plan (CMP) for the Portland Cement Works site located in Portland NSW. The site includes two (2) State significant heritage complexes: the Portland Cement Works Precinct and the Raffan's Mill and Brick Bottle Kiln Precinct and is planned to be redeveloped to a mixed used facility. This CMP forms part of the heritage assessment and advice for the new works. In addition to preparing a revised CMP, Niche has been engaged to provide Design advice for the Project as well as a Statement of Heritage Impact for the proposed works.

The purpose of the CMP is to demonstrate an understanding of the heritage values of the site and present a management strategy to ensure conservation of its heritage items. The CMP was prepared in accordance with the principles of the *Burra Charter* and guidelines set out in the *NSW Heritage Manual* and the *Conservation Management Documents* guideline (Heritage Office, Department of Urban Affairs and Planning 1996, revised 2002). It includes a review of relevant heritage studies, compilation of historical research, physical survey, a detailed significance assessment and grading of historical elements, impact assessment and conservation policies to assist the owners of the site with its future management.

The significance of individual heritage elements (buildings, structure, landscape elements and areas of archaeological potential) across the Portland Cement Works site were investigated to determine their contributory significance to the overall Portland Cement Works. Some of the structures since the last Heritage Assessment have been demolished.

Many of the individual heritage elements within scope are in a poor condition needing urgent maintenance and repair. Substantial investment and intervention is required, at a minimum, to prevent individual heritage elements of high and exceptional contributory significance into a state of disrepair.

It is important that an on-going viable use is found for the Portland Cement Works site as part of its conservation. An interpretation plan is recommended to scope out suitable future uses and interpretation of the place.

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1. Introduction

1.1 Project background

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by Catalyst Project Consulting Pty Ltd on behalf of AWJ Civil Limited to prepare a Conservation Management Plan (CMP) for the Portland Cement Works site (hereafter referred to as the 'subject site' or 'site') as part of its redevelopment. The subject site is one of Australia's most successful lime quarry and cement manufacture sites, which generated a product fundamental to the construction of many significant structures in NSW during the twentieth century. The site includes two heritage complexes: the Portland Cement Works Precinct and the Raffan's Mill and Brick Bottle Kiln Precinct, both listed on the NSW State Heritage Register (SHR) and recognised for their contribution to the development of the cement industry in NSW.

Currently the subject site is unoccupied. Works at the plant ceased operation officially in 1991 and since then there have been several heritage assessments, remedial works and demolition of structures. The current owners of the subject site, AWJ Civil, propose to redevelop the site. The proposal includes adaptive re-use of existing structures, the introduction of new infrastructure, buildings and civic facilities to support recreational activities. The owners have instigated community consultation and initial planning consultation.

This CMP has been prepared to assist the management of the subject site and its associated heritage items, inform and guide the proposed masterplan and assess its impact on the heritage significance of the items. The CMP was prepared in accordance with the principles of the *Burra Charter* and guidelines set out in the *NSW Heritage Manual* and the *Conservation Management Documents* guideline (Heritage Office, Department of Urban Affairs and Planning 1996, revised 2002).

1.2 Location

The subject site is located on the northern side of Williwa Street, in the town of Portland, NSW (Lot 1 DP 109592, Lot 1 DP 1130700 and Lot 53 DP755769). Portland is situated in the Central Tablelands of NSW and is within the boundaries of the Lithgow Local Government Area (LGA). The location and extent of the subject site is shown in Figure 1 and Figure 2. The State Heritage Register listed curtilages for the Portland Cement Works Precinct and the Raffan's Mill and Brick Bottle Kiln Precincts are shown in Figure 3. Specific heritage elements are listed in Table 1 below and overleaf and their location shown in Figure 4.

Table 1: Heritage elements located within the Portland Cement Works Site

Element No (#)	Element Type	Element Name	Element Date
1	Built	Powerhouse (Engine House)	1900-1903
2	Built	Boiler House and Chimney	1901
3	Built	Boiler Makers' / Blacksmiths Shop	c1902
5	Built	Loco Shed West	Demolished
6	Built	Loco Shed East (Engine Shed)	Demolished
7	Built	Cement Silos (8)	1971
8	Built	Weigh Bridge Office and Weigh Bridge	1901
9	Work	Rail Line and Alignment	1901
10	Built	Shower and Bath House	1947
11	Built	Administration Office	1902

Element No (#)	Element Type	Element Name	Element Date
12	Built	Williwa Street Cottage Group (excluding item 18)	c1890-1902
13	Built	Workshop (Small Store)	C1910-1914
14	Built	Annex (Small Arms' Factory)	c1943
15	Built	Ambulance Station	1912 / 1913
16	Built	Casino (Officer's Mess)	c1901
17	Built	Former Bachelors' Quarters (Cottage 3 & 4)	Demolished
18	Built	Raffan's Mill	1883
19	Built	Brick Bottle Kilns	1883
20	Work	Former Limestone Quarries (Quarry Nos 1-4)	1901
21	Landscape	Hot Water Dam and Bottle Kiln Dam	

1.3 Methods

The approach for the study involved the investigation and assessment of the site's heritage significance and the provision of conservation policies to assist its conservation and interpretation. The works also included Design advice for the redevelopment and assessing the impact of the redevelopment on the heritage significance of the subject site. This involved completing the following stages of work:

- **Stage 1 – Inception / Background Review / Consultation.**

  This stage included a review of all background information relating to the subject site to inform an understanding of its history and use. Historical research involved a desktop review of heritage register listings and previous reports relevant to the subject site. Minimal historic research was undertaken as it was deemed that the previous heritage assessments contained sufficient historical information.

- **Stage 2 – Field Survey**

  The field survey involved an assessment of the condition and integrity of fabric, assessment of the site's setting, identification of areas of archaeological potential and photographic recording of the various heritage elements located within the site. The physical condition of the heritage elements was surveyed in sufficient detail to interpret its fabric and condition and formulate an overview of recommended conservation, repair and maintenance works.

- **Stage 3 – Significance Assessment**

  Following completion of the field survey the significance of the two precincts was assessed. The significance assessment followed the *Assessing Heritage Significance* guidelines published by the Heritage Office (2001) and the more recent *Assessing Significance for Historical Archaeological Sites and 'Relics'* (2009). This informed a succinct statement of significance and grading of historical elements, which formed the basis for the CMP.

- **Stage 4 – Design Development**

Following completion of the Significance Assessment, a set of Design Principles was formulated to inform the Masterplan.

- **Stage 5 – Impact Assessment**

  The impact of the Masterplan on the site's heritage values was then assessed. This assessment took into consideration the physical condition and integrity of the items and their identified elements. A strategy to ensure its conservation and promote its heritage significance was then recommended.

1.4 Statutory Context

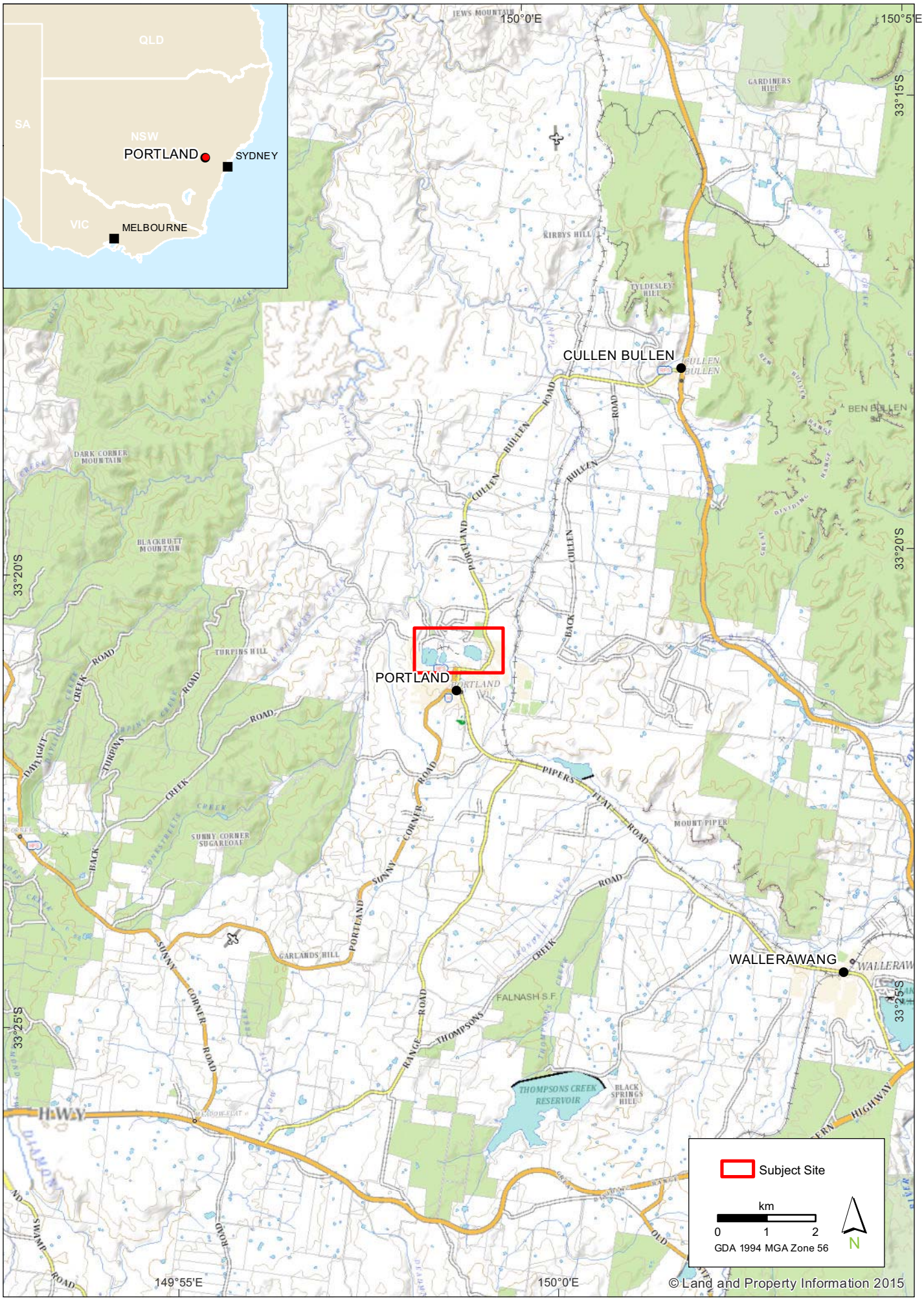
Table 2 below lists relevant heritage register listing for the subject site.

Table 2. Summary of heritage listing for the Portland Cement Works.

Heritage Register	Listing Details
SHR	▪ Portland Cement Works Precinct. Database No 5055017 ▪ Raffan's Mill and Brick Bottle Kilns Precinct. Database No 5056468
SHI	Portland Cement Group Database No 1960355
Lithgow Local Environmental Plan 2014	Portland Cement Works Group. Lot 53, DP 755769; Lot 1 DP 109592; Lot 1 DP 1130700. Item No I296

1.5 Authorship and acknowledgements

This document has been prepared by Ameera Mahmood (Niche, Senior Heritage Consultant) and Fiona Leslie (Niche, Principal Heritage Consultant).



Location map

Portland Cement Works

FIGURE 1

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Site Map

Portland Cement Works

FIGURE 2

Imagery: (c) LPI 2013-08-15

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SHR Curtilages

Portland Cement Works

FIGURE 3

Imagery: (c) LPI 2013-08-15

- 1, Powerhouse (Engine House)
- 2, Boiler House and Chimney
- 3, Boiler Makers' / Blacksmiths Shop
- 4, Cement Store (No. 2 Cement Silo)
- 5, Loco Shed West
- 6, Loco Shed East (Engine Shed)
- 7, Cement Silos (8)
- 8, Weigh Bridge Office and Weigh Bridge
- 9, Rail Line and Alignment
- 10, Shower and Bath House
- 11, Administration Office
- 12, Williwa Street Cottage Group
- 13, Workshop (Small Store)
- 14, Annex (Small Arms' Factory)
- 15, Ambulance Station
- 16, Casino (Officer's Mess)
- 17, Former Bachelors' Quarters
- 18, Raffan's Mill
- 19, Brick Bottle Kilns
- 20, Former Limestone Quarrie
- 21, Hot Water Dam and Bottle Kiln Dam
- a, Cottages 1 and 2 (Former Post Office)
- b, Cottages 5 and 6
- c, Cottages 7 and 8
- d, Cottages 9 and 10
- e, Cottages 11 and 12
- f, Cottages 13 and 14

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Location of Heritage items

Portland Cement Works

FIGURE 4

Imagery: (c) LPI 2013-08-15

2. Historical context

2.1 Preface

The following subsections provide a background to the Portland Cement Works site, detailing the history as assessed in a number of previously prepared heritage assessments and reports. Given the amount of information available on the history of the subject site, no original, primary historical research has been undertaken for this assessment.

Note: Annex 1 includes a detailed assessment of each heritage element and its historical development.

2.2 Origins and Early Development

Aboriginal occupation of the Blue Mountains area currently dates back to 12,000 years ago. Three Aboriginal groups occupied the Central Tableland; Wiradjuri to the west, Dharag to the east and Gundungurra to the south. Two Aboriginal sites were found in East Portland in 1982 during an archaeological investigation of the Ivanhoe Colliery for Blue Circle Southern Cement Limited. One of the site's included stone artefacts and preservation of this was considered not essential as there were better preserved sites in the area (NBRS 2003:6).

Portland was slow to develop as better agricultural land was located in the plains to the west and north. James Blackman, the first European, explored the area in 1820 and the first land grants were made in 1824.

In 1828, 640 acres were granted to the MacPherson family who also acquired another 640 acres in 1832. They found limestone on the property and used it to build their home. The name Limestone Flat may have been associated with their land (Fenwick 1993:8).

2.3 History of Cement

Binders for masonry can be traced back to the Assyrian and Babylonians who used clay. Later the Egyptians discovered use of lime and gypsum. The Romans used cement with slaked lime and pozzolana, a volcanic ash. In 1756 British engineers conducted experiments with hydraulic cement which consisted of limestone and clay (NBRS 2003:12).

In 1824 Joseph Aspdin, an Englishman, patented Portland cement who named it after the colour of stone from Portland, England. The demand for Portland cement grew and Germany became the leader in its production. In the late 1880s early producers experimented with Portland cement in Australia. The Cullen Bullen Lime and Cement Company were the first producers of Portland cement in NSW. Goodlet and Smith was another early company who manufactured cement in 1891 and had the first rotary kilns in 1901 in Granville. In Victoria, David Mitchell produced small quantities of cement before 1890 and the Portland Cement Co Ltd began its production in 1890 at Fyansford. In South Australia the Portland Cement Co. Ltd began production in 1892. In Queensland the earliest producer was Queensland Cement & Lime Co in 1914. New South Wales, however remained the largest producer of cement in Australia (NBRS 2003:12).

2.4 Limestone and Cement at Portland

2.4.1 Cullen Bullen Lime and Cement Company

In 1836 the MacPherson property was passed to William Lawson and in 1863, 60 acres (Portion 52 and 53) were granted to Thomas Murray. Murray pursued the discovery of limestone in 1869 and built two lime kilns (likely those that are surviving today). The business prospered but was sold to Sydney builders Alexander Currie and George Raffan in 1882. Raffan and Currie formed the Cullen Lime and Marble works Company in 1887 which became the Cullen Bullen Lime and Cement Company by 1889. By 1890 the company was producing cement with a brand name of 'Kangaroo' and the first Portland cement was being produced in commercial quantity in NSW. Maintaining the standard of cement was challenging for the company compared to producing lime (Fenwick 1993:8). By this date there were eight stationary bottle kilns, a limestone grinding plant and a steam plant and the company continued to prosper. Kangaroo cement supplied a number of Government projects including the Penrith Water Supply (NBRS 2003:10).

In 1895 the Cullen Bullen Lime and Cement Company failed due to the poor quality of cement that did not comply with Government specifications. George Raffan and his brother John took over the business. They purchased the nearby Ivanhoe Colliery and renamed the company to Ivanhoe Lime and Cement Works & Colliery and concentrated on producing lime. In 1899 they sold the land and leases to the New Zealand Mines Trust through their agent Dr August Scheidel.

2.4.2 Development of Portland town

The lime and cement industry boosted the population growth in the area and a railway line was extended to Capertree in 1883. By 1891, the Cullen school (1884) and a few cottages were constructed. Portland was gazetted on 3rd March 1894 on the south side of the cement works site. 200 people were living in the area by this date (Fenwick 1993:9). In 1901 there were 543 people with 170 dwellings and in 1911, 523 dwellings. In 1906 Portland was changed from village to 'town'. A housing and labour shortage was experienced by the company in 1901 and resulted in employees being sourced from Europe (NBRS 2003:14). The company supplied the town with electricity in 1911. The Works Picnic, in 1912 encouraged the whole town's participation. The Portland District Hospital was built with the company's assistance in 1913. There were many families with two or even three generations of members who worked for the company.

2.5 Consolidation

2.5.3 Dr August Scheidel

August Scheidel was born in Heidelberg, Germany in 1859 and received a PhD at the age of 21 for a thesis that dealt with organic chemistry. He arrived in Australia via New Zealand. In 1891 Dr Scheidel built a cyanide extraction plant for gold mines in New Zealand and gained international recognition. In 1899, he purchased the Cullen Bullen Works for the New Zealand Mines Trust. Scheidel travelled to Europe to research the manufacturing processes for producing Portland Cement and designed a plant that would produce 20,000 tons of cement per day on the dry system with rotary kilns. These plans were adopted at Portland in 1899 and led to machinery and equipment being imported. The Commonwealth Portland Cement Co. Limited was established in view of the large amount of funds required for the venture. The New Zealand Mines Trust ceased its interest in the works and Scheidel was appointed as Managing Director until 1918 (NBRS 2003:15).

2.5.4 Expansion of works

Dr Scheidel's new plans for the Portland cement site included the demolition of some existing buildings. A new railway line extended to the site from Portland Railway station. The company recommenced production in 1902 and continued to expand over the next 10 years.

Heavy machinery was imported from Germany including two Krupp rotary kilns. Construction commenced at the ball milling plant, mixing house, silos and an engine and boiler house. Additional rotary kilns were installed in 1905 and 1909. The site produced its own bricks (for construction works on site) and limestone, shale and clay were extracted from 4 quarries. Coal for power generation and cement and lime burning arrived from the Ivanhoe and Portland Collieries by rail. The company was becoming more self-sufficient. By 1911 there were 608 employees, including some in the Sydney office, and the town grew to 2,376 people. By 1912 the company was producing 40% of Australia's Portland cement. The cement produced was under the brand 'Union', a logo designed by Dr Scheidel. Demand overtook supply and by 1917 the company added its largest kiln (NBRS 2003:16).

The company experienced some labour unrest during the First World War. Strikes and high cost of labour encouraged increased mechanisation. Scheidel retired in 1919. The company saw a second phase of expansion in the 1920s (Fenwick 1993:13).

2.6 Contraction and Decline

Demand for cement declined during The Depression and it was estimated that 80% of the population in Portland were unemployed. The company continued to assist the town by transforming employee residences to boarding houses and waiving the rent for some of its ex-employees. The company had a major overhaul during the depression years with aims to improving efficiency. By 1938, 411 men were producing the same amount of cement as 611 men in 1929. The town peaked its population in 1948 at 3,125 and dropped to 2,194 in 1981 (Fenwick 1993:14).

The works did not have any major developments during the 1930s or 1940s and became inefficient over time. The company was sold to Associated Portland Cement Manufacturers (APCM) UK in 1949 which resulted in modernization of the plant including refitting and installation of a new rotary kiln in 1951. In 1953, a major change occurred to the cement manufacturing, from dry to wet process and the plant was altered in the Raw Mill, where the early ball and tube mills were replaced with slurry tanks. A new kiln was added and became the sole clinker producing unit. (Fenwick 1993:16).

The land was still owned by the Commonwealth Portland Cement Company till 1974 when it was transferred to Blue Circle Southern Limited (merger from APCM UK and BHP). In 1977 the old cement bins (part of Cement Silo No.1) were demolished (NBRS 2003:28). In 1991 production ceased as the plant became old and less efficient. The company owned other cement sites that were far more profitable. Limestone quarrying and crushing still continued until 1998 (much like the first phase of the site) and transported to the Maldon works for processing. The closure of the Works had a great economic impact on the town alleviated later by other power stations at Wallerawang and Mount Piper (Fenwick 1993:16).

2.7 Summary Chronology

A summary historical chronology of the subject site is presented in Table 3 below and has been sourced from detailed historical information provided in the following sources:

- NSW State Heritage Register Listing (Database No 5055017);
- Fenwick 1993; and
- NBRS 2003.

Table 3. Historical timeline of the Portland Cement Works

Date	Historical event
10,000 BC onwards	Known Aboriginal occupation of this region
1820	British explorer James Blackman was the first recorded European visitor to the region
1824	First European land grants made
1828	MacPherson family took up a grant of 640 acres (259 hectares) and then another 640 acres (259 hectares) in 1832. The name Limestone Flat was associated with their property and they apparently used limestone found on their property in the building of their home.
1836/7	William Lawson acquired the MacPherson family lands
1863	Thomas Murray was granted 60 acres [24 hectares] (bought from Lawson?), Portion 52 in the parish of Cullen Bullen, County of Roxburgh. He built two lime kilns on the property sometime after 1869
1863	Thomas Murray used site for lime production (and presumably extraction)
1882	Thomas Murray sold Portion 52 to Charles Bate
1882	Alexander Currie and George Raffan became the owners of Portion 52 in August
1883	Railway line extended to nearby Capertee.
1884	A one-roomed school was constructed at some distance from the site, known as the Cullen School
1887	Currie and Raffan with others formed the Cullen Bullen Lime & Marble Works, which bought Portion 52 in this year
1889-1895	The Cullen Bullen Lime & Marble Works had become the Cullen Bullen Lime & Cement Company by this date. The company produced cement under the brand name of 'Kangaroo'. The cement was of variable quality and only produced intermittently on site until production ceased in 1895. The only remnants of cement production from this era are the two bottle kilns in the north-west corner of Portion 52 and the old brick building known as "Raffan's Mill"
1894	Village of Portland gazetted, to the south of the cement company's lease, with 200 people recorded as living in the area
1895	Cullen School was moved into the new village of Portland and expanded
1895	The Cullen Bullen Lime & Cement Company failed and was taken over by one of the original partners, George Raffan and his brother John, who opened the Ivanhoe Lime and Cement Works & Colliery
1898	The Ivanhoe Lime and Cement Works & Colliery also failed

1899	The (British-owned) New Zealand Mines Trust through their agent Dr August Scheidel bought the land, plant and leases from the Raffan brothers Scheidel, a metallurgist PhD with gold mining experience, obtained backing for an investment of (Pounds)100,000 to build a cement production plant, of which he remained Managing Director until 1918
1900	A new company was formed in December, the Commonwealth Portland Cement Company (CPCC) under the guidance of Scheidel, soon installed as Managing Director. Most of the plant was demolished and new works begun, including the installation of a new German Cripps plant
1901	284 men were recorded as working in a brick plant on the property as well as in construction. A railway line was begun to link the plant to its colliery and to the Portland siding
1901	The first application for a hotel licence in Portland
1901	The CPCC donated a block of land in the south west corner of Portion 52, on the main street of the new town, to the Anglican Church
1902-1991	The site was used as a highly successful, high quality lime quarrying and cement production works, reaching its maximum levels of production in 1928. In the first half of the century it specialised in the 'Dry Process' but in the 1940s it switched over to the 'Wet Process', again requiring decommissioning of much equipment and substantial renewal of the plant.
1902	The CPCC offered the Postal Department the use of one of their newly constructed cottages in Williwa Street to house an official post office and in 1903 extended the building to house the postal facilities
1900s	Difficulties in recruiting labour to the cement plant meant that overseas workers were brought in, 'adding a Cosmopolitan note' to the isolated village. The workforce increased from 150 in 1903 to the 1911 figure of 608 employees (including some in the Sydney office)
1904	A new subdivision was laid out in the town
1904	First meeting of the United Labourers Protective Society, later the Railway Workers Union and then the Australian Workers Union. Scheidel noted that by 1908 that most of the plant's employees were members of the union.
C.1905	Portland town band formed, with the CPCC supplying most of the uniforms and music, and it became known as the Commonwealth Portland Cement Company's Employees' Band. A grandstand was built for the band on company land in 1910. The local Rifle Club was also supplied with land donated from the company
1906	Portland was gazetted as a town
1907	NSW Governor Lord Northcote visited Portland cement works, followed soon afterwards by His Excellency Admiral Sir Harry Rawson
c1908	An Accident Ward was opened on site to care for victims of accidents on site, and was also open to the general Public. According to NBRS&P, it was likely to have been initially sited in the Casino. The 1910 Annual Report noted that this facility had already saved two lives and alleviated much suffering. But it was expensive to run and Scheidel recommended the company help establish a town hospital

1909	A book entitled 'To Commemorate the Seventh Congress of Chambers of Commerce of the British Empire Held in Sydney Sept 1909' stated that the cement produced by CPCC was 'the favourite brand on the NSW market' which 'has also secured a considerable share of that of the other states, of New Zealand and of the South Sea Islands. Important public tenders have been secured with the Imperial and Federal Governments, the Public Works Department, the Railway commissioners of NSW, the Metropolitan Board of Water Supply and Sewerage, at Sydney, the Sydney Harbour Trust, the Sydney Municipal Council, the Railway commissioners of Queensland and Victoria, the Melbourne and Metropolitan Board of Works, the Hobart and Dunedin Drainage Boards and others. . . A large number of important structures have been, and are at present being built with the Company's cement [including] The Cataract Dam [and] the Barren Jack Irrigation Scheme in NSW. By 1912 the company was producing about 40% of Australia's Portland Cement.
1910	The NSW Premier and the NSW Governor Lord Chelmsford with his wife Lady Chelmsford visited Portland on 11 May and workers were granted a public holiday for the day
1910	The CPCC began providing free electricity to light the main streets of Portland
1910.	The police station was built.
1911	A visitor noted that the town was a bit shabby, with most of its retail buildings being relocated from nearby Sunny Corner, which had been shrinking with the end of its gold rushes. However in this year the CPCC built five houses for its officers
1912	Nearly the town turned out for the Works picnic which was held on the company's recreation ground on the opposite side of Williwa Street, facing the Works site
1912	The foundation stone for a new town hospital was laid by Scheidel. Portland District Hospital was officially opened 30 August 1913. The CPCC continued to support the hospital with coal and by encouraging employee fund-raising for occasional new pieces of expensive equipment. From 1924-1946 senior executives of the company provided expertise to the Hospital Board by taking on the roles of president, secretary or treasure
1914-1918	WWI meant increased demand for cement because of the cessation of imports from Germany but also a reduction in the available workforce as men went off to war. The number of employees at the plant contracted from 634 in 1912 to 462 in 1917 and there were improved efficiencies. There was considerable increase in labour unrest during these years. It is interesting to note that Scheidel, though German, was not interned during WWI, as were other Germans in the company including the work's chemist. Notes from the company secretary . . . Indicate that a donation of (Pounds) 5000 was made to the war effort to keep Scheidel out of the main camp and allow him to be 'interned' at Portland.
1915	There was a one-month-long strike in the works. The first Works Picnic was held in April, in an attempt to improve labour relations
1915	The CPCC further donated land to the Anglican Church for a church hall and rectory
1915	The CPCC established an ambulance service for the town at a time when such a service was rare in the country
1916	Provided the cement for the reinforced concrete floors of the head office of the Commonwealth "Moneybox" building at 108-120 Pitt Street Sydney

1917	There was a general strike that forced the cement works to close down for two months. Scheidel described it as 'the most dangerous and disastrous industrial upheaval yet experienced in this country'. Scheidel was determined that 'known troublemakers' were not to be re-employed when the works re-opened and the union saw this as victimisation. Although labour relations seem to have warmed after the retirement of Scheidel the following year, Annual Reports continued to note occasional strikes and mentioned the activities of 'communist agitators'
1918	Scheidel retired and was replaced as Managing Director by John Symonds. The war changed the previously good relations Germans had developed in Australia and as soon as the war was over Scheidel left Australia. Having travelled through Germany and much of Europe he settled in Italy before returning to Frankfurt, Germany where he died in 1932
1923	The CPCC Annual Report noted the shortage of housing in Portland and by 1925 had built 21 cottages for its employees.
C.1925	A large new house was built for the Works Manager, John Saville, who held this position from 1903 to 1938.
1926	The former residence of the Works Manager was transformed into a boarding house by the company. This house was designated for the use of single teachers in the local school 1932-1950, when it was known as 'Harmony Hall'. It was eventually demolished.
1920s	After war efficiencies and labour unrest, the 1920s saw increased mechanisation of the plant and a second phase great expansion of the works with new, more efficient combination mills being added to the raw and cement mill operations and no.8 Rotary Mill operating from 1924. The company continued to prosper even in the face of increased competition arising from the establishment of three new cement companies in NSW (on top of the already established and fiercely competitive Kandos Cement Ltd)
1928-1934	Great Depression forced a downsizing of output and workforce. Major maintenance works were undertaken on the plant and works. Up to 80% of employees lost their jobs and many took to fossicking for gold in the hills nearby (a region gold rush during the nineteenth century). The company waived rent for those still living in company housing in 1932
1931-32	The works supplied much of the cement used in a day labour project to seal the main streets on the town in concrete
1938	Only 411 men employed in the plant produced much the same output as the 611 men employed in 1929, as a result of mechanisation and increased efficiencies
1939-1945	World War II saw the Commonwealth Government resume a small block of land in Portion 52 fronting Williwa St to build a 'Munitions Annex' for workers in the production of munitions.
Late 1940s	The company changed hands to Associated Portland Cement Manufacturers U.K. (APCM) (Lithgow LEP entry). A decision was made to change form 'dry process' to 'wet process' and the old plant was decommissioned or refitted and a new No.1 Rotary kiln installed in 1951
1948	Town seems to have reached its peak population: 3125.
c.1956	Industrial unrest in Portland focused around the 'Butcher Girl Strike' defending young woman ill-treated by butcher employer
1958	The Portland & District Olympic Pool was built mostly by voluntary labour on land leased by the company to the city, the former site of 'Harmony Hall' opposite the works. The company also provided materials and general assistance

1959	Production capacity of the Works was 250,000 tons of cement and 20,000 tons of lime
1960s	A new product was developed which was to become the most significant in the Portland Cement range, ultimately marketed under the trade name, 'Off White'. However the cement market in Australia was reducing and although this product increased in sales the overall output of cement from the company dropped from 250,000 tons p.a. in 1974 to 160,000 tons in 1979 and 88,000 tons in 1983. *The production of this specialised cement kept the Commonwealth Works viable till the 1990s (Fenwick:2)*
1974	APCM merged with BHP and formed Blue Circle Southern Cement Ltd. (Lithgow LEP entry). This company also owned cement works at Maldon (near Picton), Charbon and later Berrima.
1981	Population: 2194.
1991	The operating plant was old and getting less efficient and the production of cement ceased in November although the limestone quarries remained open, and some crushing equipment, for supplying the cement works at Maldon
1992	Blue Circle Southern Cement taken over by Boral.
1993	Heritage assessment report focusing on the industrial archaeological values of the site was commissioned by Blue Circle Cement and completed by Peter Fenwick and Kate Holmes.
1998	Boral closed down the limestone quarries and began dismantling the plant and rehabilitating the landscape in preparation for sale. Much of the cement works equipment has been taken off the site.
c1890	First set of workers' accommodation built along Williwa Road, being the old Bachelors' Quarters (No. 3 & 4 Williwa Street) and No. 7 & 8 Williwa Street. They are built during the Cullen Bullen Lime and Cement Company operations, as simple three-room single-storey terrace cottages. The Bachelors' Quarters are constructed as four three-room apartments with shared amenities at the rear.
1900-1901	Post Office building is constructed. Originally built to accommodate staff, the building is offered to the Postal Department in 1902 as the district Post Office, a role it plays until 1912.
1900-1902	Four semi-detached single-storey cottages are built along Williwa Street (5 & 6, 9 & 10, 11 & 12, 13 & 14 Williwa Street). Each is built as four room dwellings; two bedrooms, a living room and a kitchen.
1901	The Casino (Officers' Mess) is constructed facing Williwa Street, closest to the cement works. Built under Scheidel's instructions to be used by the company's unmarried officers and mechanics for their meals and social gatherings. It consists of two rooms; one for meals and one as a reading room.
c1908	Casino (Officers' Mess) is converted into an accident ward, which was also made available to the general public.
1912	A new Post Office building is constructed in Portland. The old Post Office in Williwa Street is converted for use by the Bank of New South Wales, with the attached dwelling becoming the bank manager's residence. The bank remained in the building until 1964.
1912	Accident ward deals with at least 30 typhoid patients during an epidemic in Portland.
c1920	Alterations to the old Bachelors' Quarters includes the addition of a laundry and bathroom at the rear of each apartment.
c1930s	Old Bachelors' Quarters is opened up to form two bedroom apartments.

1943	Land adjoining the Casino is taken up by the Commonwealth Government for construction of a fire arms annex connected to the Small Arms Factory in Lithgow. The annex is one of ten buildings in the district constructed to supply rifle and machine gun components to the Lithgow factory.
1964	The Bank of NSW relocates to a new bank building in Portland and the former Post Office building is converted back to accommodation for the cement works.
1974	Portland Cement buys back the former small arms annex building and uses it for on-site storage.
1992	The cottages begin to be vacated as the cement works begin to close. All cottages are currently empty.

2.8 Phases of Use / Operation

There are two operational phases in the life of The Portland Cement Works. Table 4 below lists the relevant heritage elements, shown in Figure 4, for each phase.

Table 4: Summary of the phases of use at Portland Cement Works and related heritage elements

Phase of Use	Time period	Description of Phase	Heritage elements within the Subject site built or installed during this phase
1	1882-1899	George Raffan and John Raffan produced lime and cement in commercial quantities.	#18 – Raffan's Mill #19- Brick Bottle Kilns # 12 Williwa Street Cottage Group
2	1899-1998	The Portland Cement Works site produced cement in commercial quantities.	#1 – Powerhouse (Engine House) #2 – Boilerhouse and Chimney #3 – Boilermaker's / Blacksmith's Shop #7 – Cement Silos (8) #8 – Weighbridge Office and Weighbridge #9 – Rail line and alignment #10 – Shower and Bathhouse #11 – Administration Office #13 – Workshop (Small store) #14 – Annex (Small Arm's Factory) #15 – Ambulance Station #16 – Casino (Officer's Mess)

Note: The following items have been demolished since the previous heritage assessment:

- No. 4 - Cement Store (No.2 Cement Silo also known as Mixing House)
- No. 5 - Loco Shed West
- No. 6 - Loco Shed East (Engine Shed)
- No.17 – Cottages 3 & 4 (Former Bachelor's Quarters)

2.9 Historic Precincts

Following a review of the history and a site inspection, four (4) historic precincts have been identified within the Portland Cement Works site. These are summarised in Table 5 below.

Table 5: Description of Precincts

Precincts	Time period	Description of Precincts
1	1882-1899	Raffan's Mill and Brick Bottle Kilns Precinct
2	1882-1899	Williwa Street Cottages Group Precinct
3	1899-1998	Cement Processing Precinct
4	1899-1998	Cement Administrative Precinct

2.10 Early photographs and plans

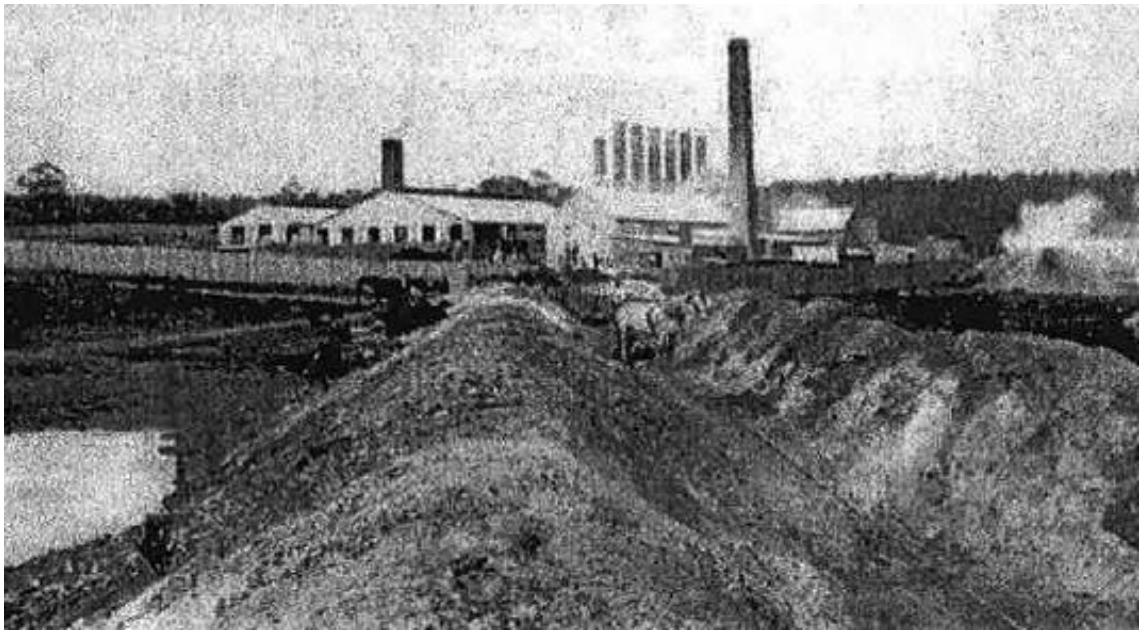

Plate 1: 1889 Cullen Bullen Lime and Cement Co. Limited shows early building at the subject site (Source: The Cement and Concrete in Australia publication p.13, as cited in NBRS 2003:10)

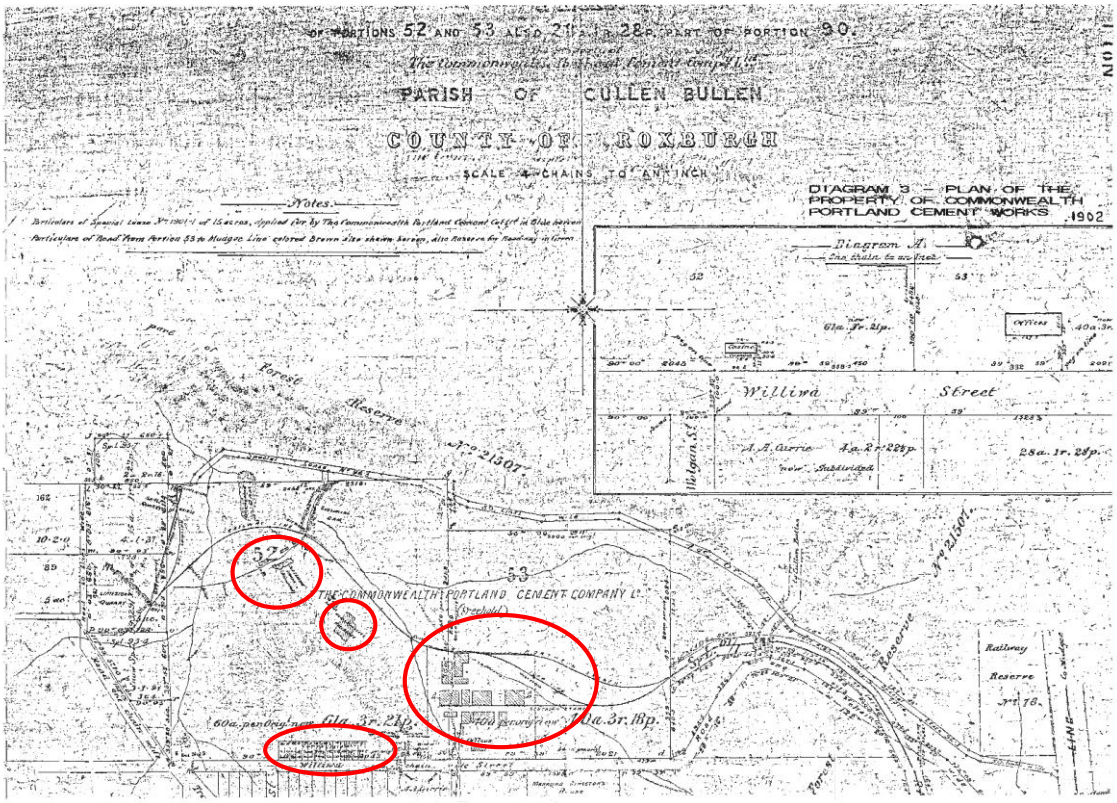

Figure 5: 1902 Diagram 3 Plan of the Property of Commonwealth Portland Cement Works showing early buildings; Williwa Street Cottages, Powerhouse, Casino, Administration Office, Raffan's Mill, railway line, limestone and shale quarries (Source: as cited in Fenwick 1993)

Plate 2: 1904 View of works looking north showing left to right; Cement Mill building (demolished) Powerhouse as two buildings, Boilerhouse and Chimney and Casino (foreground). (Source: 1904 Promotional Booklet BCSC Head Office Library as cited in Fenwick 1993)

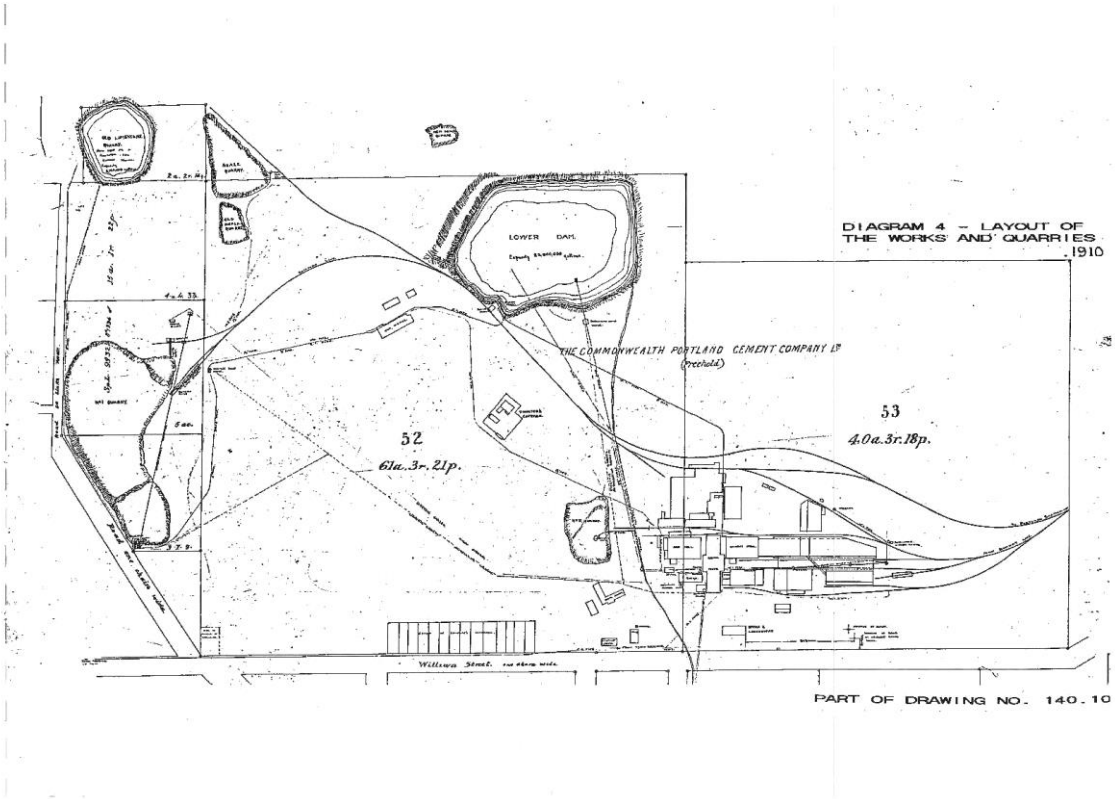

Figure 6: 1910 Diagram 4 Layout of the Works and Quarries showing extent of railway line and larger Quarries (Source: as cited in Fenwick 1993)

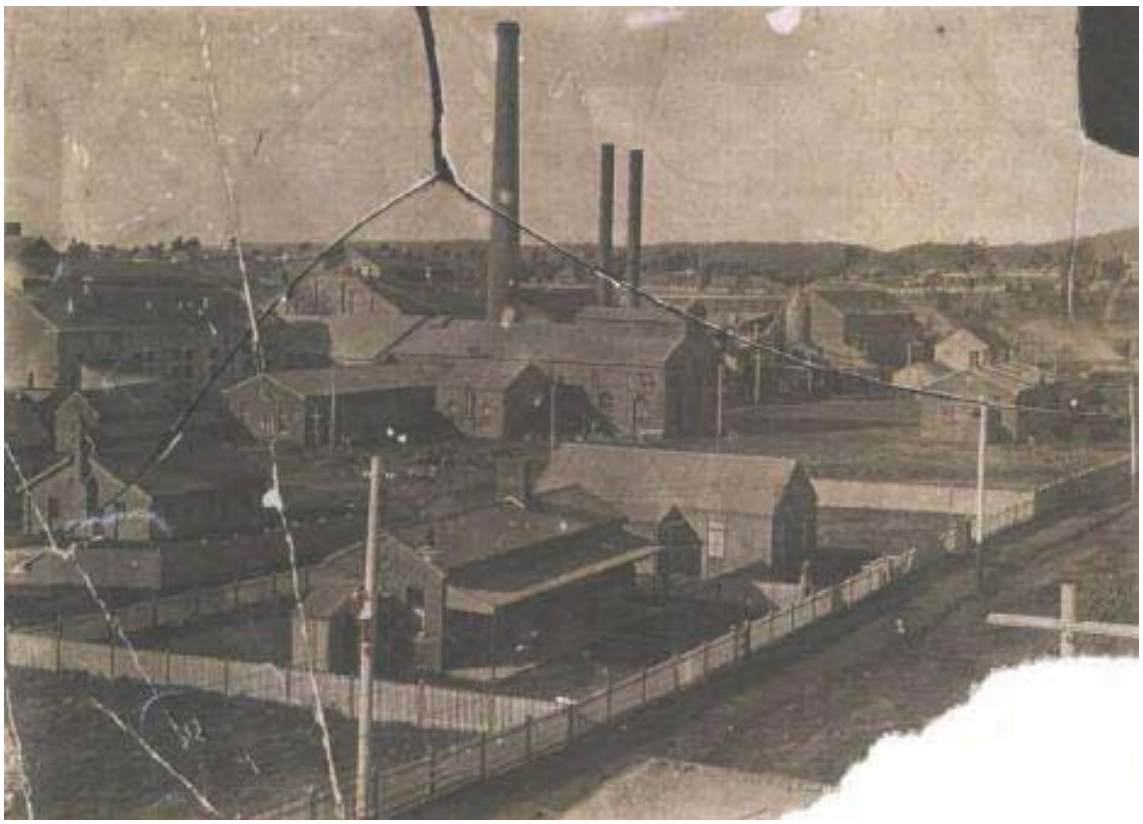

Plate 3: 1914 View of Portland Cement Site Works showing the Casino, foreground, and The Powerhouse, background (Source: Blue Circle Maldon Archives as cited in NBRS 2010)

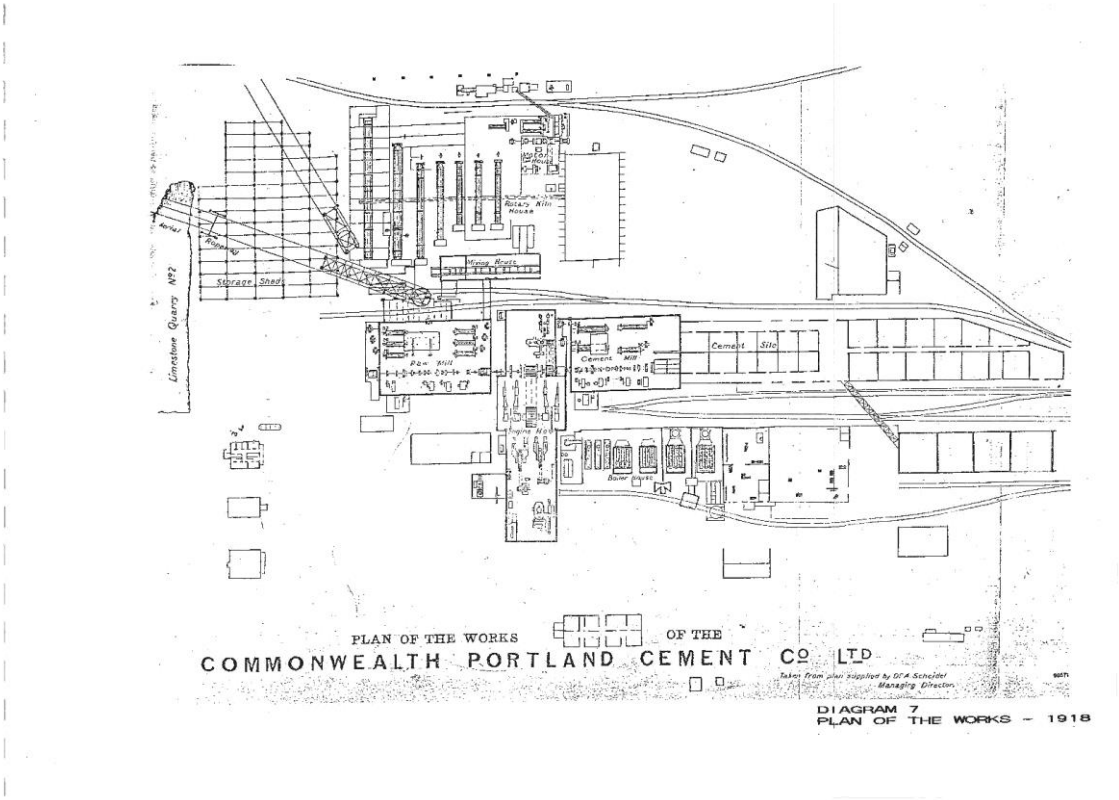

Figure 7: 1918 Diagram 7 Plan of the works Commonwealth Portland Cement Co Ltd showing detail fit-out of Powerhouse, Boilerhouse and Cement Mill buildings (Source: as cited in Fenwick 1993)

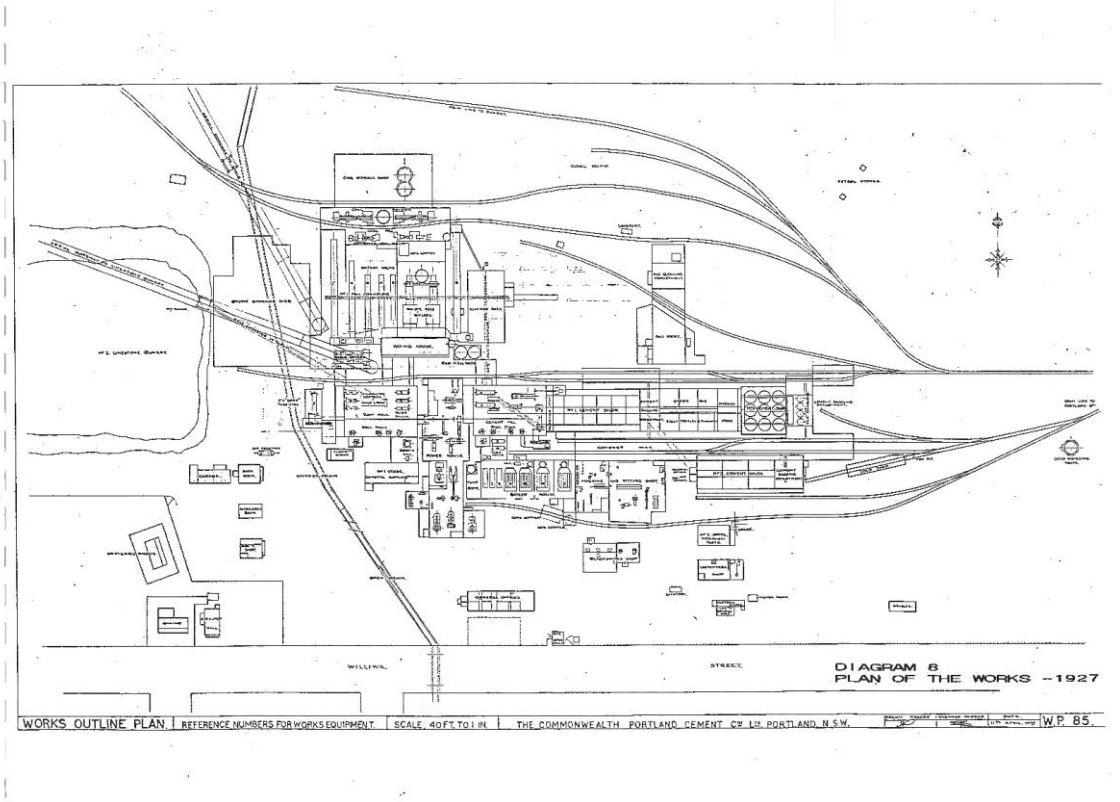

Figure 8: 1927 Diagram 8 Plan of the works showing extension of machinery to Boilermaker's / Blacksmith's Shop (Source: as cited in Fenwick 1993)

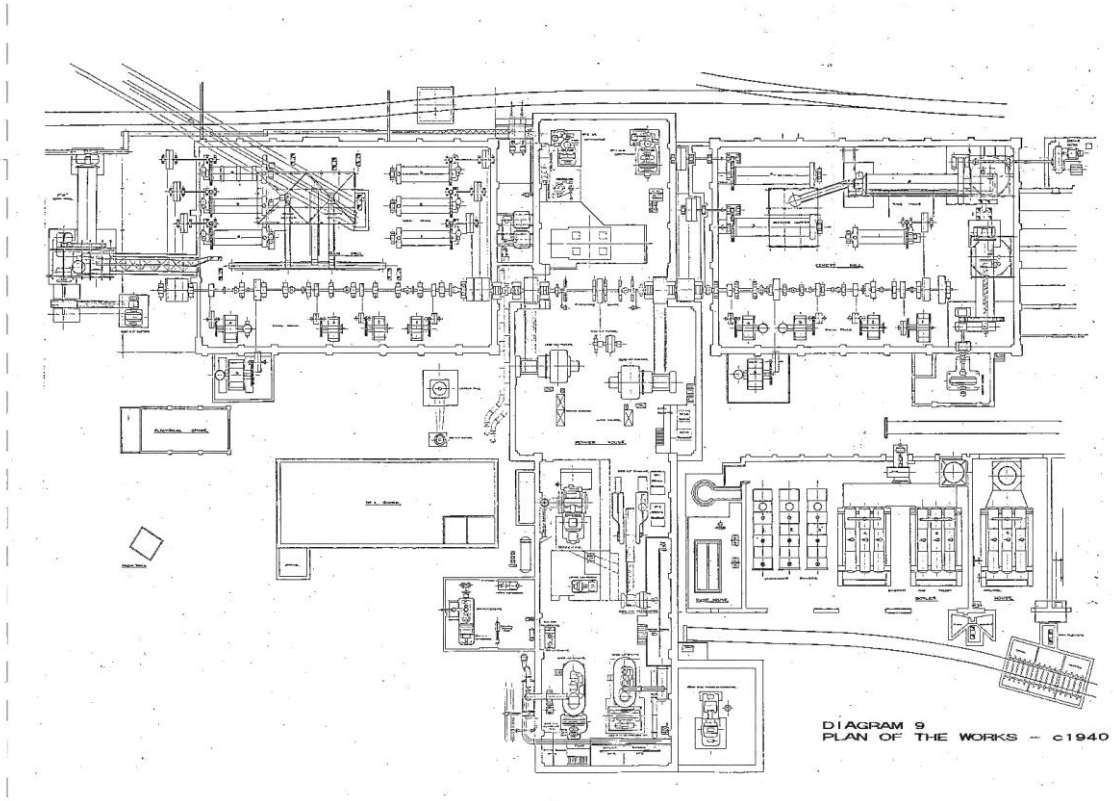

Figure 9: 1940 Diagram 9 Plan of the works showing detail fit-out of Powerhouse, Boilerhouse and Cement Mill buildings (Source: as cited in Fenwick 1993)

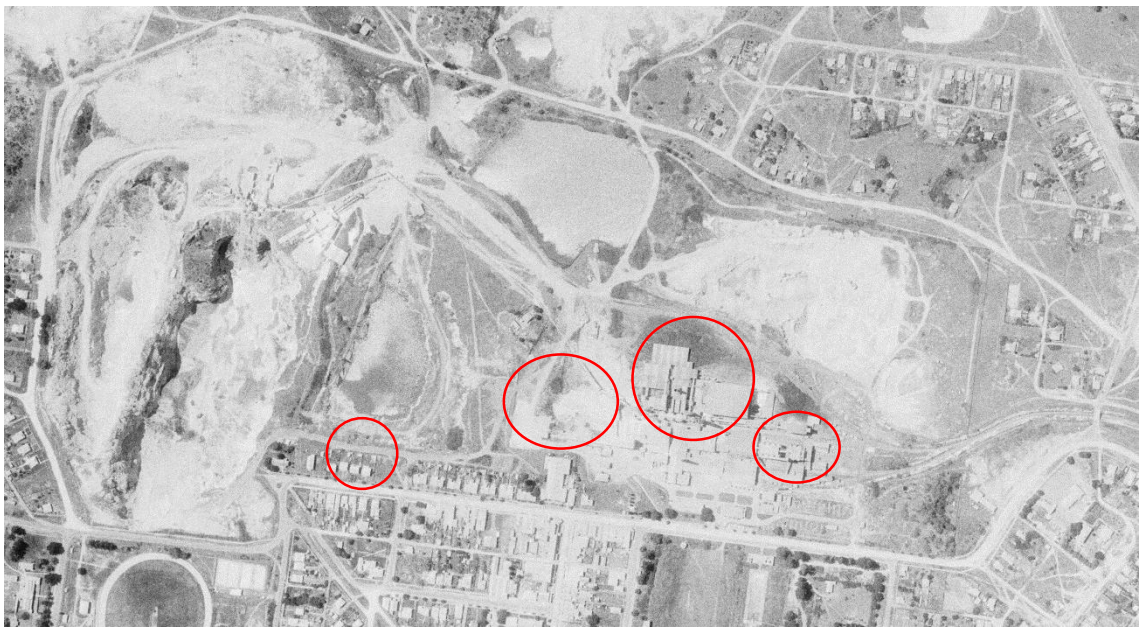

Plate 4: 1964 Aerial photograph of Portland Cement Works showing demolished structures north, north east, north west and west of the Powerhouse building. (LPI NSW)

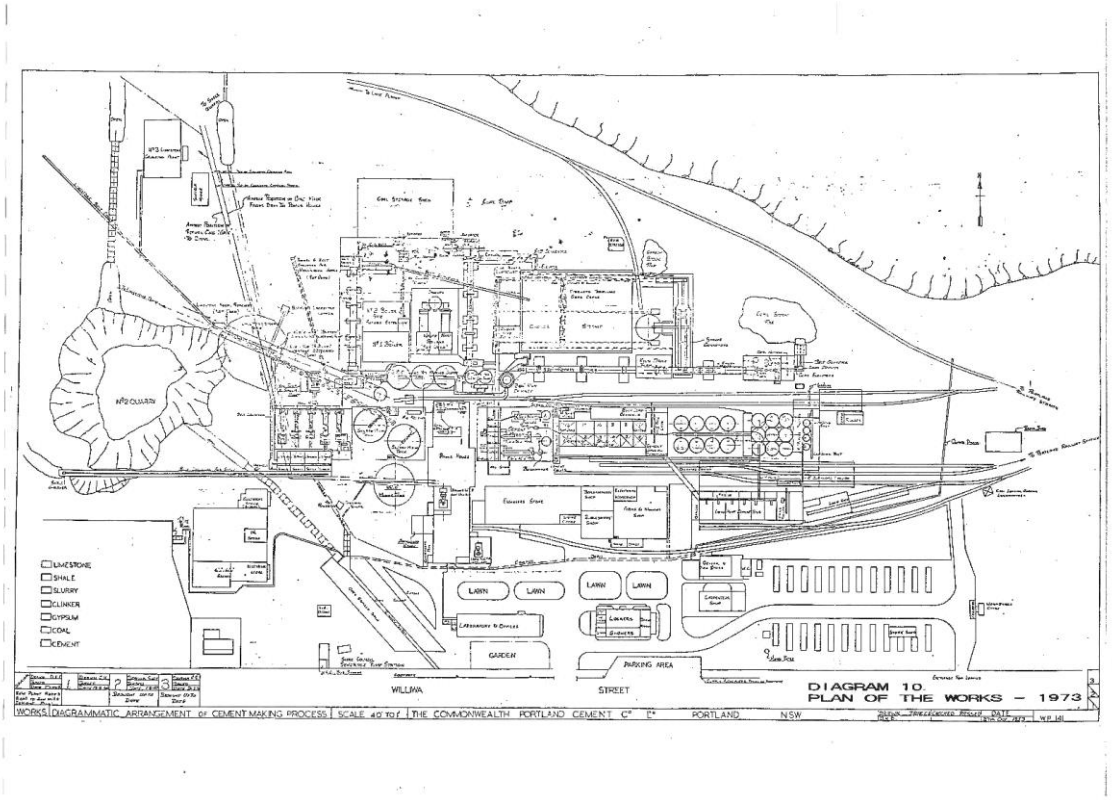

Figure 10: 1973 Diagram 10 Plan of the works showing density of development within the site (Source: as cited in Fenwick 1993)

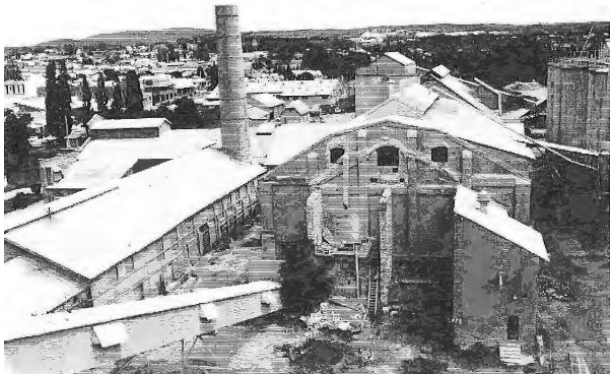

Plate 5: 1993 Cement Mill Building (now demolished) (Source: Fenwick 1993)

Plate 6: 1993 Clinker shed in right foreground (Source: Fenwick 1993)

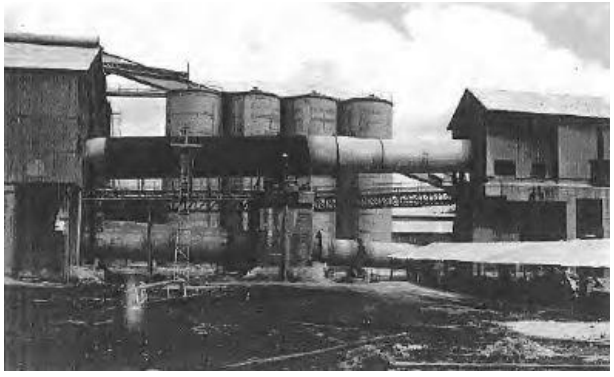

Plate 7: 1993 Rotary kiln (Source: Fenwick 1993)

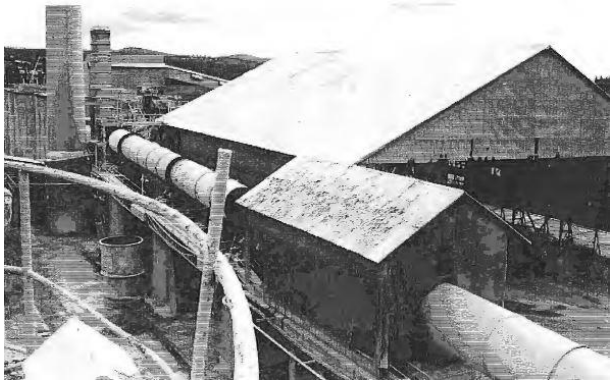

Plate 8: 1993 Rotary kiln and Clinker shed (right) (Source: Fenwick 1993)

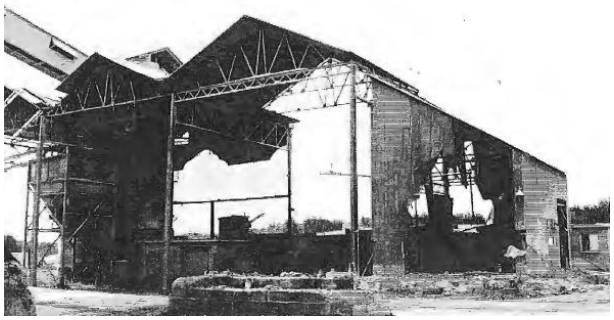

Plate 9: 1993 Remnants of Coal Mill building (Source: Fenwick 1993)

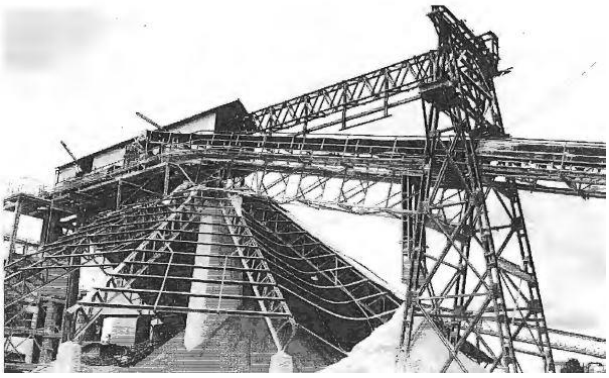

Plate 10: 1993 Crushed limestone and clay storage structure. Incline conveyor was an original Aerial Ropeway Tower (Source: Fenwick 1993).

Plate 11: 1993 Loco shed (now demolished) (Source: Fenwick 1993)

Plate 12: 1994 Aerial photograph of Portland Cement Works showing demolished structures (LPI NSW)

Plate 13: 2013 Cement Store (No.2 Cement Silo) now demolished (Source: Heritage Archival Recording 2013)

2.11 Historical themes

The following historical themes for the Portland Cement Works have been derived from the SHR listing.

Table 6. Historical themes at the Portland Cement Works.

Australia theme (Abbreviated)	New South Wales theme	Local theme
2. Peopling – Peopling the continent	Ethnic influences-Activities associated with common cultural traditions and peoples of shared descent, and with exchanges between such traditions and peoples.	Multi-national contacts with local communities-
2. Peopling – Peopling the continent	Ethnic influences-Activities associated with common cultural traditions and peoples of shared descent, and with exchanges between such traditions and peoples.	Importing German industrial technology-
3. Economy-Developing local, regional and national economies	Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	Landscapes of industrial production-
3. Economy-Developing local, regional and national economies	Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	Landscapes of mining-
3. Economy-Developing local, regional and national economies	Industry-Activities associated with the manufacture, production and distribution of goods	Extracting clay and firing bricks onsite-
3. Economy-Developing local, regional and national economies	Industry-Activities associated with the manufacture, production and distribution of goods	Manufacturing cement-
3. Economy-Developing local, regional and national economies	Mining-Activities associated with the identification, extraction, processing and distribution of mineral ores, precious	Processing copper-

	stones and other such inorganic substances.	
4. Settlement-Building settlements, towns and cities	Accommodation-Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Accommodating workers in workers' housing-
4. Settlement-Building settlements, towns and cities	Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Creating landmark structures and places in regional settings-
4. Settlement-Building settlements, towns and cities	Towns, suburbs and villages Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Developing civic infrastructure and amenity-
5. Working-Working	Labour-Activities associated with work practises and organised and unorganised labour	Working complex machinery and technologies-
5. Working-Working	Labour-Activities associated with work practises and organised and unorganised labour	Working in mines and quarries-
5. Working-Working	Labour-Activities associated with work practises and organised and unorganised labour	Workers organising workers-
8. Culture-Developing cultural institutions and ways of life	Sport-Activities associated with organised recreational and health promotional activities	Providing public sporting facilities-

3. Previous heritage studies

3.1 Preamble

The Portland Cement Works has been the subject of numerous detailed heritage studies. A brief summary of the most relevant is provided in the following subsections.

3.2 A Heritage Assessment of the Portland Cement Works – Fenwick (1993)

In 1993 Peter Fenwick and Katie Holmes were commissioned by Blue Circle Southern Cement Limited to prepare a heritage assessment of the Portland Cement Works. The aim of the study was to evaluate the industrial archaeological values of the site and determine policies for conservation and future management.

Of relevance to the current study, the following areas were recorded in detail:

- Extract from 1908 Annual Report – Works at Quarry No 1 and The Plant. An account of the Lime, Shale Clay and Cement works included as well as alterations and additions to the Plant and Rotary Kilns, Raw Mill and Cement Mill.
- The Works – Plant and Buildings – A detailed list of all the machinery and equipment housed in the buildings. A record of the activities at the quarries is also included.
- Cement making process – Wet and Dry processes and Types of Portland Cement.
- Limestone quarrying at Portland.
- Pre and Post 1900 description of the buildings on the subject site.

The report includes mechanical drawings of the plant works and building layouts and early photographs of built structures, equipment and quarries. It also includes the company's production and operational flow charts for the process of wet and dry cement making processes. These detailed accounts of the structures and equipment at the subject site help to provide an understanding of the industrial heritage value of the site.

3.3 Conservation Management Plan: Portland Cement Works Williwa Street Cottages and Buildings in Portland – NBRS (2003)

In 2003, Noel Bell Ridley Smith & Partners Architects was engaged to undertake a CMP instigated by the proposed redevelopment of the subject site. The report includes the following:

- History and development of the overall subject site.
- The origins and development of the Williwa Street cottages and their correspondence to the two main phases of development; George Raffan phase and Portland Cement Company.
- The Physical evidence and Recording of condition of fabric was not included in the report.
- A Significance Assessment for the subject site.
- Development of a conservation policy – This includes identification of constraints and opportunities for the Williwa Street cottages.
- Conservation policies – The policies are developed under three groups; masterplan applying to wholes site, heritage precincts and the Williwa Street cottages.

3.4 Statement of Environmental Effects to accompany a Development Application for Subdivision and Demolition of the Portland Cement Work Site – URS (2010)

This Statement of Environmental Effects (SEE) was prepared by URS Australia Pty Ltd (URS) on behalf of Blue Circle Southern Cement (BCSC) to support a Development Application (DA) for subdivision and demolition of the former Cement Works at Portland. The works were instigated by the sale, handover and reuse of the property as well as conservation of the identified heritage precincts.

Two stages of works were proposed; Stage One – subdivision of the Stage One area and associated streetscape and utility installation works and Stage Two – demolition of five (5) heritage buildings comprising the Former Bachelors, Quarters (Cottage 4); Small Arms Factory Annex; Cement Store, Loco Shed West and Cement Silo.

Of relevance to this CMP the report includes the following:

- A Structural building survey and cost of repair works prepared by URS.
- Phase 1 Environmental site assessment:
  - Includes a site history to identify activities that may have resulted in potential soil/ground contaminants. A summary of findings from historic aerial photographs and Historical Certificates of Title forms part of this analysis.
  - Previous environmental investigations have identified the presence of contamination at the subject site. Ash material from the former boilers has been spread across large areas of the site and as a screen behind the residential properties along Williwa Street. Water in Quarries 1 and 2 to the north of the site contains low concentrations of chromium and has a pH of up to 10. Surface soil samples collected around the residential buildings along the northern side of Williwa Street contained concentrations of some metals were detected above threshold concentrations.
  - Coffey Geosciences Pty Ltd prepared a remediation and validation plan (RVP) in 2004 for a proposed residential subdivision of the cottages on the northern side of Williwa Street. The RVP addressed concentrations of metals in the surface soil that exceeded threshold concentrations, and presented an approach and methodology for site remediation and validation.
  - Potential sources of offsite soil/groundwater contamination identified during the site inspection include the BP service station located on Williwa Street to the south of the site and the Integral Energy substation located on Saville Street to the south of the site.
  - Asbestos Containing Material (ACM) is thought to be present in the roof of the former workshop and locomotive shed, and in the residential buildings. Polychlorinated Biphenyls (PCBs) may be present in the transformers on the site.
  - A limited stockpile characterisation of ash material located on the northern side of the residential buildings on Williwa Street indicated that the material contained Polycyclic Aromatic Hydrocarbons (PAH) concentrations below the Limit of Reporting (LOR) and inorganics concentrations below the adopted guidelines. The analytical results were consistent with those from previous investigations of ash material generated on site.

3.5 Statement of Heritage Impact: Former Portland Cement Works – NBRS (2010)

In 2008 NBRS+Partners was commissioned by Blue Circle Southern Cement Limited (Boral) to prepare a Statement of Heritage Impact as part of the Development Application for the subdivision of the subject site. No additional historic research was undertaken for this statement. The statement includes the following:

- Physical evidence – A physical recording of the Powerhouse (Engine House), Chimney or Boiler Stack, Blacksmiths' Workshop, Fitters' Workshop, Rectangular Cement Silo (No 2 Silo), Locomotive Shed, Eight Cylindrical Cement Silos, Weighbridge Station and Weighbridge, Administration Building, and Locker/ Shower Room. A physical recording of the Williwa Street cottages, the Raffan Mill and Brick Kilns and former Limestone Quarries were also undertaken.
- Recommendations – The statement supports the Godden Mackay Logan reports' recommendation to demolish the Cylindrical cement silos (due to low significance), No 2 Cement Silo and The Loco Shed (due to low significance and major structural instability).
- Proposed works – The proposed works include to separately title the Williwa Street cottages (intended for subdivision and sales), demolish the former Bachelors Quarters, Small Arms Factory Annex, Cement Store, Loco Shed West and 8 Cement Silos. The concept plan to retain and reinstate an access road (running in a north westerly and south easterly direction across the site) is supported for its interpretation of the former road and rail access routes. The 'Casino' building is proposed to be used for commercial or community use due to its association with a place of recreation during the Portland Cement occupation. The works near the Hot water Dam have been highlighted as potential areas of visual impact to the Brick Bottle Kilns. Views to and from the kilns and Cement Processing/Administrative heritage precinct are recommended to be retained.

3.6 Scheduled of Conservation Works – Former Fire Arms Annex – NBRS (2011)

In June 2011 NBRS+Partners was commissioned by URS on behalf of Blue Circle Southern Cement Limited (Boral) to prepare a conservation works schedule for the former Fire Arms Annex building. The objective was to provide a scope of works to ensure the adaptive re-use and conservation of significant fabric of the Fire Arms Annex, located on the former Portland Cement Works. It is proposed the Former Fire Arms Annex be adaptively re-used as a public hall. The report includes the following:

- Historic overview of Small Arms Factory in Lithgow and Fire Arms Annex in Portland. The Fire Arms Annex was one of ten buildings in the district constructed to supply rifle and machine gun components to the Lithgow factory during World War II.
- Physical description – Records the condition of the building to be in poor shape.
- Schedules - Includes a detailed list of conservation works.

3.7 Heritage Archival Recording – Former Portland Cement Works: AECOM (2013)

Boral Property Group (Boral) commissioned AECOM to complete an archival recording of three structures, being Cement Store (No. 2 Cement Silo), Loco Shed West and Loco Shed East (Engine Shed), prior to the demolition of these structures. AECOM was also commissioned to conduct archival recording for cottage numbers 3 and 4 on Williwa Street (Former Bachelors Quarters (Cottage4)). The structures have been approved for demolition due to structural failure and have been approved under the Lithgow City Council Development Application (DA) #039/10DA. The Heritage Council gazettal for the State Heritage Register (SHR) listing (10 August 2012) identified 'Exemptions for the Portland Cement Works Precinct' which covers the approval for the demolition works as approved under DA. The archival recording is required due to the heritage significance of the larger site. The report includes:

- Summary history of the site.
- Description of the heritage items.
- Significance assessment (SHR listing Heritage Office 2005a).
- Archival documents – Digital photography and CAD drawings of the buildings.

The significance ratings for the items proposed for demolition are all moderate to high in value; the Cement Store (No. 2 Cement Silo) (moderate), Loco Shed West (high) and Loco Shed East (Engine Shed) (high). The report outlines the assessment process that led to the demolition approval for the structures. Cement Store, Loco Shed West and Loco Shed East had been identified in the Godden Mackay Logan report (2005) as being structurally unsound and uneconomical for repair. The Williwa Street cottages 3 and 4, although identified in the NBRS+Partners report (2003) as having high significance was proposed for demolition due to severe structural damage. This was also noted in the SHR listing by the Heritage Office (2005a).

3.8 Former Portland Cement Works heritage advice: AECOM (2013)

AECOM Australia Pty Ltd (AECOM) was engaged by Boral Property Group (Boral) to provide heritage specialist advice regarding the general heritage management of the subject site and in particular addressing the following list of activities:

- Minimum standards of maintenance and repair.
- Removal of asbestos from structures in the cottage precinct.
- Heritage treatment and future management options for the fire damaged cottage.
- Other heritage requirements before anti-vandalism measures are implemented.
- Removal of the two weighbridge plates.

Of particular relevance to this CMP is a list of Significance grading of buildings on the site and a table of Maintenance and repair required to comply with the Minimum Standards of Maintenance and Repair set out in Section 118 of the Heritage Act. Timeframes proposed in this table relate to the level of significance of the item therefore items of exceptional significance have been given shorter time frames.

Presence of asbestos had been noted in the Williwa Street cottages. The asbestos sheeting was identified as having no heritage significance. The report supports the removal of this material. Cottage 6 was damaged by fire prior to November 2008. It is recommended that the roof be weather proofed immediately. A structural engineer's assessment of the building was recommended prior to advising on the items future management.

The works also proposed to backfill the voids beneath two weighbridge plates due to safety. As the works are reversible, the proposal was supported.

3.9 Portland Cement Works Closure Plan: Boral Cement (2013)

The Closure Plan was originally prepared by URS and finalised by Boral Property Group (BPG) following a meeting held in August 2012 with the Department of Trade and Investment (DTI) in order to reach an agreed position amongst all regulatory authorities. The purpose of the 2013 Closure Plan is to complete and document the rehabilitation program, provide a mechanism for obtaining necessary final approvals to relinquish all mining leases from DTI and subsequently permit Boral to divest the site. Of particular relevance to this CMP are the outstanding items which include:

- Public safety – Warning signs to cautions persons entering the site of the water ponds and steep gradients and maintaining the site fencing.
- Soil management – Remediation of the old UST site to be completed in accordance with DA submission (April 2013). Investigate bonded asbestos in soils following demolition works in respond to Section 131 Notice issued by DTI (5 July 2013).

- Groundwater – Monitoring groundwater in the bores around former petrol UST.
- Slope stability – An audit/integrity assessment for the gabion walls along the western embankment to Quarry 2.
- Weed management – Ongoing management of noxious and significant environmental weeds on a regular basis.
- Heritage – Progressive minimum maintenance and repair works in consultation with a heritage consultant.
- Cement works buildings and Infrastructure – Demolition of unsafe buildings in accordance with approved DA. Expression of Interest for the Small Arms Factory and Casino and small adjoining building.

4. Physical assessment

4.1 Preamble

A physical inspection of the subject site was conducted on 8 September 2017 by Fiona Leslie (Niche, Principal Heritage Consultant) and Ameera Mahmood (Niche, Senior Heritage Consultant).The results of the survey are detailed in Annex 1. In this Annex individual tables describe each built heritage element, its condition, integrity and recommendations. Evidence of former structures and the setting of the subject site was also noted.

4.2 Site description

The Portland Cement Works is a large historical industrial site in the town of Portland, NSW. The site consists of buildings, structures and quarries which are currently disused. The site fronts Williwa Street to the south with single storey buildings located on this streetscape including the Williwa Street Cottage Group. Entry to the site is located to the east of the Cottage Group.

There are significant views and vistas including streetscapes and views within the subject site (Plate 14, Plate 15, Plate 16, Plate 22, Plate 28, Plate 29 and Plate 30). The general surrounding area is characterised by one and two storey retail, hotel and residential buildings (Plate 7).

Plate 14: Significant view of the Portland Cement Works from Wolgan Street looking north (Chimney of The Portland Cement Works in the background).

Plate 15: Significant streetscape view of Williwa Street looking north east showing Annex and Casino building

Plate 16: Significant streetscape view of Williwa Street looking west showing Williwa Street Cottage Group.

Plate 17: View of Williwa Street looking east showing groupings of early buildings.

Plate 18: View of Williwa Street looking south east showing southern boundary to site and remnant cast iron fencing.

Plate 19: View of Williwa Street looking south showing southern boundary to site and chain mail fencing.

Plate 20: View of Weighbridge Office from internal access road looking west.

Plate 21: View of Ambulance Station, Workshop (Small store) and Annex building looking south west from The Powerhouse building.

Plate 22: Significant view of Powerhouse looking south west showing Silos to the left from internal access road.

Plate 23: View of Powerhouse looking west.

Plate 24: View of Ambulance Station, Workshop (Small store) and Annex building looking south from internal access road.

Plate 25: View of Workshop (Small store) and Annex building looking south from internal access road.

Plate 26: View of Boilermaker's / Blacksmith's shop (foreground) and Powerhouse and Chimney beyond looking west.

Plate 27: View of Boilermaker's / Blacksmith's shop and Silos looking north west.

Plate 28: Significant view of Raffan's Mill from access road adjacent Brick Bottle Kilns looking south east.

Plate 29: Significant view of The Portland Cement Site works from Brick Bottle Kilns looking south east.

Plate 30: Significant view of Brick Bottle Kilns from access road adjacent Raffan's Mill.

4.3 Landscape features

4.3.1 Former limestone Quarries

There are four former limestone quarries; No. 1, 2 and 3 are located to the west, whilst quarry No. 4 is located north west of the site.

Plate 31: View of Quarries 1 and 2 looking south.

Plate 32: View of Quarries 3 looking south west.

4.3.2 Trees

There are lines of trees located north of the Williwa Street Cottages Group and north of Quarry No.4 that currently act as a landscape buffer to the Williwa Street Cottages Group precinct and The Portland Cement Works precinct.

Plate 33: View of Annex and stand of trees to south of Williwa Street Cottages Group looking south west.

Plate 34: View of tree line to north of site beyond Quarry No.4 looking north from Silos.

4.3.3 Hot water dam and Bottle Kiln Dam

The area of the Hot water dam and Bottle Kiln Dam was difficult to determine as the dams had little or no water.

Plate 35: View of Hot water dam/Bottle Kiln Dam looking north.

4.4 Archaeological potential

Due to the continuous development of the Portland Cement Works there is a high potential for archaeological remains of earlier structures to have survived within the subject site. Overlays of the 1902 plan and the 1910 plan of the Cement Works (See Figure 11 and 12) shows a number of areas where former buildings and structures were located. These include:

- The former Director's Cottage, which was located in the centre of the site;
- The former 'Old Works' buildings, located to the south east of Raffan's Mill;
- Subsurface remains of the additional bottle kilns, since demolished;
- Remains of the former 'Pumphouse' near the dam in the south western corner of the subject site;
- Archaeological remains associated with the Williwa Street Cottages, including former outbuildings; and
- Remains of the former Cement Works buildings to the north of the Powerhouse. These buildings included the Cement Mill building, Rotary Kiln House and Mixing House.

Areas of archaeological potential identified within the subject site are identified in Figure 13 and shown in Plates 36 – 39.

Plate 36: Area directly north of the Powerhouse, looking east, where former buildings of the Cement Works were located.

Plate 37: Area to the south east of Raffan's Mill, looking north west, where remnants of the Old Works buildings may survive.

Plate 38: The brick bottle kilns and adjacent areas, looking north, where structural remains of additional former kilns may survive.

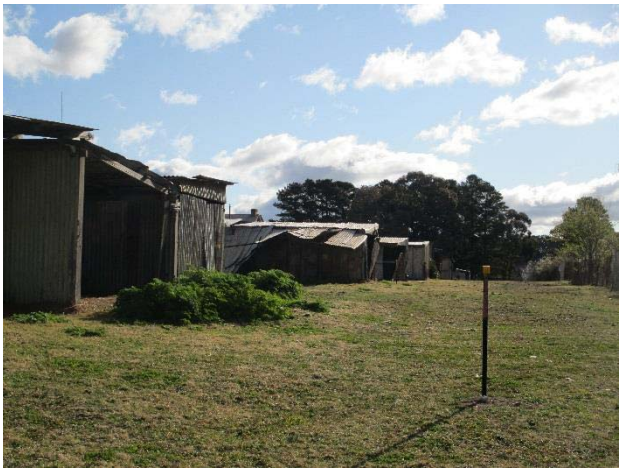

Plate 39: Rear of the Williwa Cottages, facing west, where archaeological remains of former outbuildings may be located.

1, Powerhouse (Engine House)
2, Boiler House and Chimney
3, Boiler Makers' / Blacksmiths Shop
4, Cement Store (No. 2 Cement Silo)
5, Loco Shed West
6, Loco Shed East (Engine Shed)
7, Cement Silos (8)
8, Weigh Bridge Office and Weigh Bridge
9, Rail Line and Alignment
10, Shower and Bath House
11, Administration Office
12, Williwa Street Cottage Group
13, Workshop (Small Store)
14, Annex (Small Arms' Factory)
15, Ambulance Station
16, Casino (Officer's Mess)
17, Former Bachelors' Quarters
18, Raffan's Mill
19, Brick Bottle Kilns
20, Former Limestone Quarrie
21, Hot Water Dam and Bottle Kiln Dam
a, Cottages 1 and 2 (Former Post Office)
b, Cottages 5 and 6
c, Cottages 7 and 8
d, Cottages 9 and 10
e, Cottages 11 and 12
f, Cottages 13 and 14

m
0 50 100 150
GDA 1994 MGA Zone 56
N

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1902 Overlay

Portland Cement Works

Figure 11

Imagery: (c) LPI
2013-08-15

1, Powerhouse (Engine House)
2, Boiler House and Chimney
3, Boiler Makers' / Blacksmiths Shop
4, Cement Store (No. 2 Cement Silo)
5, Loco Shed West
6, Loco Shed East (Engine Shed)
7, Cement Silos (8)
8, Weigh Bridge Office and Weigh Bridge
9, Rail Line and Alignment
10, Shower and Bath House
11, Administration Office
12, Williwa Street Cottage Group
13, Workshop (Small Store)
14, Annex (Small Arms' Factory)
15, Ambulance Station
16, Casino (Officer's Mess)
17, Former Bachelors' Quarters
18, Raffan's Mill
19, Brick Bottle Kilns
20, Former Limestone Quarrie
21, Hot Water Dam and Bottle Kiln Dam
a, Cottages 1 and 2 (Former Post Office)
b, Cottages 5 and 6
c, Cottages 7 and 8
d, Cottages 9 and 10
e, Cottages 11 and 12
f, Cottages 13 and 14

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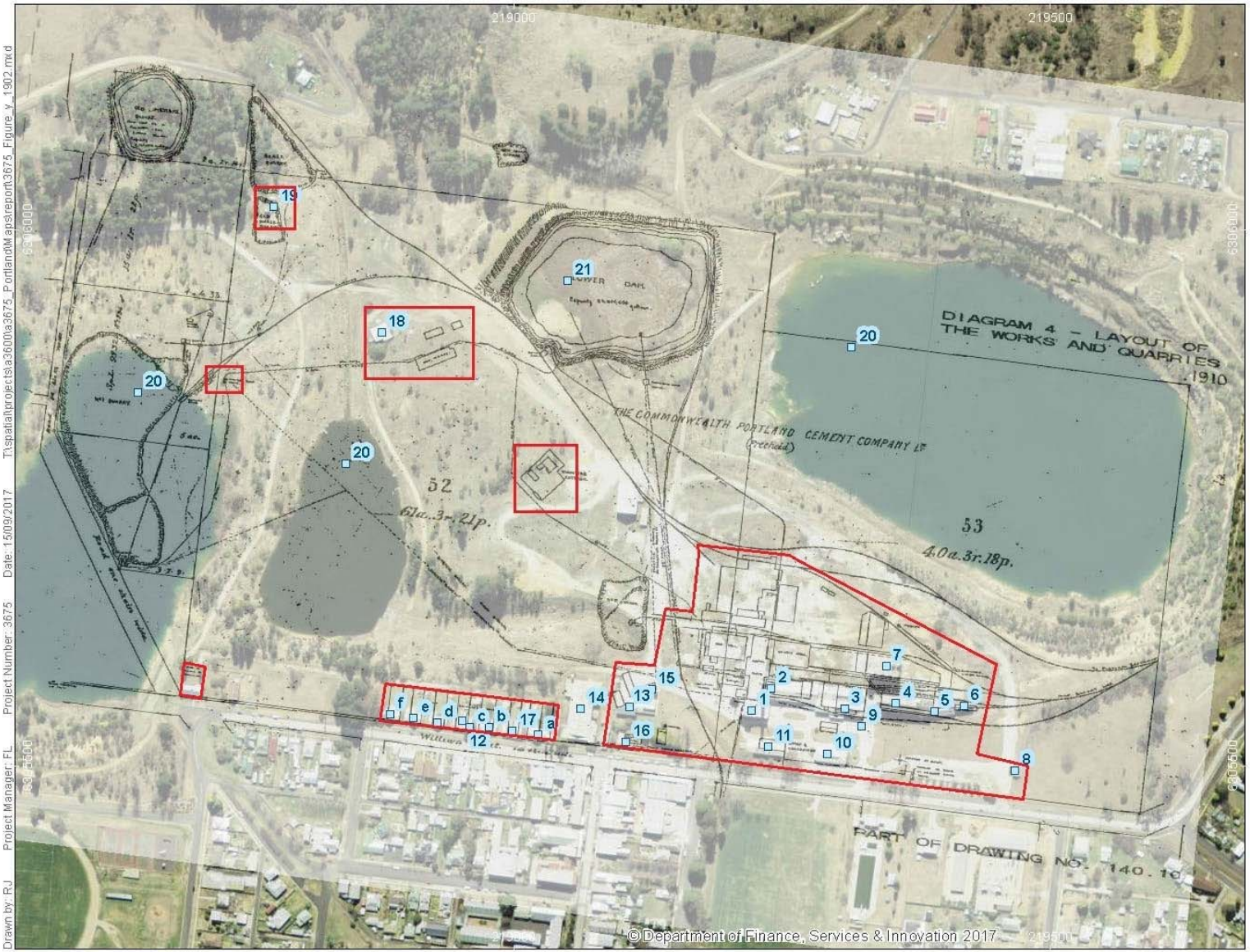
1910 Overlay
Portland Cement Works

Figure 12
Imagery: (c) LPI 2013-08-15



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Areas of High Archaeological Potential

Portland Cement Works

Figure 13

Imagery: (c) LPI 2013-08-15

4.5 Condition and integrity

The condition and integrity of the various heritage elements was assessed by Niche using the criteria listed in Table 77 and 8. The results of the assessments are represented in the relevant items in Annex 1 and summarised in Table 9 overleaf.

While there are no standard criteria for condition assessments for historical items, the criteria used in this assessment have been adapted from Pearson and Marshall's (2006 and 2011) national studies of the condition and integrity of historic heritage places.

Table 7: Condition Assessment Criteria

Condition Assessment Criteria	Description
Poor	There are signs of extensive damage from water, rot, instability or structural failure, death/disease in vegetation, or erosion or other major disturbance. For built elements might include the loss of substantial sections of roofing exposing internal framing and structural elements, extensive fire damage, wall collapse and subsidence, major rising or falling damp, damage due to vandalism or other major disturbance or damage to a site. Internally, walls, floors or joinery are missing, or in dilapidated condition.
Fair	A building that is structurally sound, but may require some stabilisation and repair due to inadequate maintenance. Most repairs would be minor in nature. Externally this would mean minor loss of cladding or roofing. Internally, walls, floors and joinery are in need of minor repair, repainting etc. For significant vegetation, no signs of ill-health, maybe minor damage or limb-loss; May be in need of conservation action and maintenance works.
Good	A building is structurally sound, weather-tight, and with no significant repair needed. Internally, walls, floor and joinery are well maintained. Important features are well maintained. For significant vegetation signs of good health such as new growth are visible as is conservation action and maintenance.

Table 8: Integrity Assessment Criteria

Integrity Assessment Criteria	Description
Low	Major elements that would contribute substantially to the places' heritage values have been removed, extensively altered, or for vegetation, are dead, in poor health and are not being maintained. For built elements, original fabric has been replaced, removed or destroyed, or re-arranged. Important features (such as structures, machinery, archaeological deposits etc.) have been removed or a new structure covers the site. Where the values of the place do not relate directly to fabric (such as in a place valued for association with an historic event), judgement must be made on the impact of changes in diminishing the ability of the viewer to understand the associations of the place.
Medium	There has been some loss of important features, but the site, building or vegetation still retains sufficient original or historically associated fabric for its values to be understood and interpreted.
High	Elements that contribute to the value of the place are very largely intact and not compromised by significant removals, modifications, additions, or other damage (or ill-health for significant vegetation).

Table 9: Summary of Condition and Integrity of built heritage elements within the Subject Site

Element No (#)	Element Type	Element Name	Condition Assessment	Integrity Assessment
1	Built	Powerhouse (Engine House)	Poor / Fair	High
2	Built	Boiler House and Chimney	Fair	Medium
3	Built	Boiler Makers' / Blacksmiths Shop	Poor	Medium
7	Built	Cement Silos (8)	Good	High
8	Built	Weigh Bridge Office and Weigh Bridge	Poor	Medium
9	Work	Rail Line and Alignment	Good	Medium
10	Built	Shower and Bath House	Good	High
11	Built	Administration Office	Poor / Fair	Medium / Low
12	Built	Williwa Street Cottage Group (excluding item 18)	Poor	Medium
13	Built	Workshop (Small Store)	Poor	Medium
14	Built	Annex (Small Arms' Factory)	Poor	High
15	Built	Ambulance Station	Fair	High
16	Built	Casino (Officer's Mess)	Good	High
18	Built	Raffan's Mill	Poor	Medium
19	Built	Brick Bottle Kilns	Poor	Medium

5. Significance assessment

5.1 Significance framework

The *NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) provides the framework for the following significance assessment and Statement of Significance. These guidelines incorporate the seven aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter) into a framework currently accepted by the NSW Heritage Council.

Annex 1 includes a Significance assessment of each built heritage element. A summary is provided in Table 11.

5.2 Significance assessment

The significance of the Raffan's Mill and Brick Bottle Kilns detailed in the NSW State Heritage Register listing is reproduced below.

The Raffan's Mill and Brick Bottle Kilns are of State significance as outstanding and rare remnants of a nineteenth century lime and cement manufacturing plant in a still legible industrial landscape. Their development is closely linked to the origin of the associated town of Portland and to the later development of the Commonwealth Portland Cement Works. The Raffan's Mill and Brick Bottle Kilns represent the genesis of the Portland cement industry in NSW and the beginnings of a century of cement production at Portland.

The significance of the Portland Cement Works site detailed in the NSW State Heritage Register listing is reproduced below.

The Portland Cement Works Site is of State significance as the remnants of a cultural landscape that evidences the history of one of Australia's most successful lime quarrying and cement manufacture enterprises – an enterprise which generated a product crucial to the construction of many important structures in NSW throughout the twentieth century. Between 1900 and 1995 the site provided both raw materials from its own quarries and a place for the long-term, large-scale production of world-quality cement, using a succession of both local and imported machinery and labour. This industrial site led to the establishment and naming of the town of Portland and has contributed to its civic and social development since the late nineteenth century. This relationship between industry and local population is of State significance because of its rarity within NSW as a long-term, single-industry, one-company town, and because the relationship is evident in the layout of the town and in many of its civic amenities (from workers cottages and concrete roads to the municipal swimming pool). While the (former) Portland Cement Works Site is of local significance as 'the heart of Portland', it is of State significance for begetting 'the town that built NSW'.

Table 10: Portland Cement Works - Assessment of Heritage Significance

Criterion	Significance
(a) An item is important in the course, or pattern, or NSW's cultural or natural history (or the cultural or natural history of the local area)	The Portland Cement Works site is of State significance as the site of first commercial production of Portland cement and as Australia's most successful and longstanding lime quarrying and cement manufacturing enterprises. The company supplied lime and cement to many important structures in NSW in the twentieth century. Dr Scheidel's plant incorporated cutting edge technology such as the coal fired rotary kilns placing the Works at the forefront of technological advances in cement production in the world.

	It is also significant for the relationship of a commercial enterprise to its town. The company sustained the town of Portland and contributed to its civic and social development. This single industry/one-company town is a rare example in NSW.
(b) An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (State significance); OR ***An item has strong or special association with the life or works of a person, or group of persons, of importance in the cultural or natural history of the local area (local significance).***	The Portland Cement Works site is of State significance for its association with George and John Raffan who established and developed the Cullen Bullen Lime and Cement Company in 1889 The site is also associated with Dr August Scheidel, a metallurgist PhD, described as the father of the modern cement industry in Australia. Scheidel designed and built the works, incorporating expertise in building, mining and engineering making it the most successful cement producing plan prior to WWII.
(c) An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievements in NSW (or the local area)	The Portland Cement Works site is of State significance for its remnant industrial buildings representing examples from Federation to Inter War periods. The larger scale buildings evidence the technological skill and workmanship of the era using bricks manufactured on site whilst the smaller scale cottages represent the vernacular architecture and the social stratification of the company town. The site also evidences the incorporation of cutting edge technology imported from Europe such as the coal fired rotary kilns. The Powerhouse building, Chimney and Brick Bottle Kilns are also local landmarks.
(d) An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.	The Portland Cement Works site is of State significance for its unusual relationship of the company and town. The works played a central part in the lives of Portland's people by financial, environmental, social and civic interrelationship. This is evidenced in the establishment of a hospital by the company, the provision of electricity to the town, construction of employee accommodation and financial assistance during the Depression and WWI. The works are particularly significant to those whose family members were killed or injured at the works.
(e) An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)	The Portland Cement Works site is of State significance for its research potential as a rare industrial archaeological site and understanding the early technology of lime and cement production in Australia. Areas of high archaeological potential identified at the site include: the former Director's Cottage, former pumphouse, former parts of the Cement Works that have since been demolished including bottle brick kilns and the Old Works buildings and the Williwa Street Cottage Group. Archaeological investigation of these areas may provide significant insight into the early operation of the site, the life of the Dr Scheidel and the change and evolution of technology within the industrial precinct.
(f) An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area); and	The Portland Cement Works site is of State significance for its rarity of a single industry, one-company town. It also evidences rare industrial archaeological features and surviving structures such as the Raffan's Mill and Brick Bottle kiln, of a large scale enterprise lasting ninety years.

(g) An item is important in demonstrating the principal characteristics of a class of NSW's: ***Cultural or natural places; or*** ***Cultural or natural environments;*** ***(or a class of the local area's)*** ***Cultural or natural places; or*** ***Cultural or natural environments.***	The Portland Cement Works site is of State significance as representative example of an industry and its town. The Williwa Street Cottage Group represent the social stratification of the company town.

5.3 Summary statement of significance

The Portland Cement Works site is of State significance as a remnant industrial site evidencing one of Australia's most successful and longstanding lime and cement manufacturing plants. It is known as the site of first commercial production of Portland cement in Australia, which was employed in many significant structures in NSW and became known as the 'town that built NSW'. The plant is associated with Dr August Scheidel, the father of modern cement industry in Australia who incorporated cutting edge technology in cement production and George and John Raffan who developed the early lime and cement company in NSW. The Portland Cement Works site evidences a number of structures that demonstrate technological advances and aesthetic characteristics such as utilising world leading technology in the field of cement production and encompassing fine examples of Federation and Inter-War buildings. The Powerhouse building, Chimney and Brick Bottle Kilns are landmarks to the area. The Portland Cement Works site is a rare example of a single industry, one-company town. The works played a central part in the lives of Portland's people through financial, environmental, social and civic interrelationship. The works are significant to those whose family members were killed or injured at the works. The Portland Cement Works site has also research potential in terms of rare industrial archaeology. The works represent the relationship of an industry and its town whilst the Williwa Street Cottage Group represent the social stratification of the one-company town.

5.4 Significance of individual elements

As a substantial complex of historical elements, it is important to understand the contributory significance of individual elements to the overall site. Detailed significance assessments for each element within scope were prepared and are included in the individual assessments in Annex 1. The criteria for assessment is defined below:

- **Exceptional** – the element has outstanding heritage values, is unique or distinctive values and/or makes an outstanding contribution to the heritage values of the mining complex.
- **High** – the element has substantial heritage values in its own right and/or makes a substantial contribution to the heritage values of the mining complex.
- **Moderate** – the element has heritage values and it makes a sound contribution to the heritage values of the mining complex.
- **Low** – the element has limited heritage values or makes a minor contribution to the heritage values of the mining complex.
- **Intrusive** – the element has no significance and/or detracts from the significance of the place.

The results of the heritage significance grading are summarised in Table 11 overleaf.

Table 11: Summary of heritage significance grading for heritage elements within the Subject Site.

Element No (#)	Element Type	Element Name	Element Date	Heritage Significance Grading
1	Built	Powerhouse (Engine House)	1900-1903	Exceptional
2	Built	Boiler House and Chimney	1901	High
3	Built	Boiler Makers' / Blacksmiths Shop	c1902	High
7	Built	Cement Silos (8)	1971	High
8	Built	Weigh Bridge Office and Weigh Bridge	1901	Moderate
9	Work	Rail Line and Alignment	1901	Moderate
10	Built	Shower and Bath House	1947	High
11	Built	Administration Office	1902	High
12	Built	Williwa Street Cottage Group (excluding item 18)	c1890-1902	High
13	Built	Workshop (Small Store)	C1910-1914	High
14	Built	Annex (Small Arms' Factory)	c1943	Moderate/Little
15	Built	Ambulance Station	1912/1913	High
16	Built	Casino (Officer's Mess)	c1901	High
18	Built	Raffan's Mill	1883	Exceptional
19	Built	Brick Bottle Kilns	1883	Exceptional
20	Work	Former Limestone Quarries (Quarry Nos 1-4)	1901	High
21	Landscape	Hot Water Dam and Bottle Kiln Dam		High

5.5 Physical and Visual Curtilage

The SHR curtilage for The Portland Cement Works precinct and the Raffan's Mill and Brick Bottle Kilns precinct are shown in Figure 3. To recognise the relationship between the two precincts it is strongly recommended that an additional visual curtilage be adopted and considered during future management of the subject site. This is shown in Figure 14 overleaf. This recommendation is based on a consideration of the following:

- The history of Portland Cement Works and the Raffan Mill's and Brick Bottle Kilns are intertwined. The Raffan's Mill and Brick Bottle Kilns represent the early lime and cement works which were the origins of The Portland Cement Works, hence the significance of the two sites should be treated as one.
- Historical evidence states that there was a significant period of time when both of the precincts worked together to produce cement and hence the presence of a physical relationship between the two precincts is apparent.
- Based on these findings a view corridor between the two sites should be established to conserve and recognise the relationship between the two precincts.

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SHR Curtilages + Visual Curtilage

Portland Cement Works

Figure 14

Imagery: (c) LPI 2013-08-15

6. Heritage conservation management

6.1 Preamble

Conservation can be regarded as the management of change. It aims to safeguard that which is culturally significant within a process of change and development. The objective of this document is to establish a set of criteria, policies and recommendations for the ongoing use of the subject site as a desirable future direction aiding owners, managers and planning assessors of the property to manage and assess the property against the criteria.

The general policy for conservation of a site is based on recognising its heritage significance and relevant constraints.

6.2 Constraints and opportunities arising from heritage planning requirements

The Lithgow Local Environment Plan 2014 is the principal planning instrument affecting land use in the Lithgow Local Government Area. There are currently no Development Control Plans applicable to the Lithgow Local Government Area. An opportunity exists in identifying and prescribing Development Control policies that is applicable to not only The Portland Cement Works site but the broader town of Portland.

6.3 Constraints and opportunities arising from the Statement of Significance

The Portland Cement Works as an item of State Significance should be retained and conserved. New work should be undertaken to ensure it is sympathetic to the key phases of development; 1882-1899 (George Raffan and John Raffan) and 1899-1998 (The Portland Cement Works). Items dating from the key period of significance should be conserved. New work or activities at the site should not diminish the evocative character as a historic industrial site.

6.3.1 Future development challenges and opportunities

It is important that the Portland Cement Works does not fall into further disrepair. The continued use of the site, or parts of the site and adaptation is preferred, as this will assist with retarding further deterioration of significant elements and could result in some measure of ongoing maintenance works being carried out. It is always better to ensure the ongoing use of a heritage complex as the best means of securing its conservation. However, reuse of all the buildings is unlikely to be viable due to the scale of the site and economic considerations. Buildings that are graded as Exceptional and High significance should ideally be adapted first.

6.3.2 Constraints and opportunities arising from the physical condition of the complex

Extent of repairs and conservation works at The Portland Cement Works are numerous and ongoing. Maintenance will require an appropriate level of funding. Urgent repairs and medium term conservation works are identified under each heritage element in Annex 1. A further long term plan of repairs and maintenance will need to be established and implemented once an appropriate reuse option for the site has been identified.

Section 118 of the Heritage Act provide for the regulation of minimum standards for the maintenance repair of State Heritage Register items which include; weatherproofing, fire protection, security and essential maintenance.

Minimum standards of building regulation; implementing the Building Code of Australia (BCA) should be applied to the site. The main provisions of the BCA include structural requirements, fire resistance, access and egress, services and equipment and health and amenities. When considering the BCA requirements in heritage buildings, proposals must ensure that significance fabric and spatial qualities are not compromised.

6.3.3 Constraints and opportunities arising from remediation and rehabilitation

Previous reports have highlighted the need for remediation and rehabilitation of the site and it is understood the majority of this work has been undertaken. An updated assessment is required to determine whether there are any remaining remediation and rehabilitation activities that need to be undertaken for e.g. presence of Septic tanks were noted adjacent the Chimney.

6.3.4 Constraints and opportunities arising from adaptive reuse options

The Portland Cement Works was used essentially as an industrial site with ancillary buildings of residential, administrative and civic uses. The new use should be compatible with the original use of the site and also respect the relevant precincts in which they are located.

Opening the site to the public

Opportunities to make the site accessible to the public should be investigated. Safety considerations, and the need for certain urgent safety repairs for some elements identified in this CMP, must be a key factor in determining whether such access is appropriate or not.

While general access is unlikely, special access may be a worthwhile consideration. Opportunities could include:

- Use of open spaces and buildings for outdoor functions and events, for example:
  - Weddings.
  - Concerts.
  - Cinemas.
  - Speciality or local markets.
  - Galleries or museums.
  - Special interest groups, including local heritage societies.
  - Universities as an educational centre, for example architecture, heritage, engineering studies.
  - TAFE colleges, for training people in specific tradecrafts.
- Conversion and re-use of the Administration Office for small to mid-sized indoor functions (e.g. receptions, seminars, meeting venue, school groups, or other suitable hire). The building is also ideal in scale and use as temporary accommodation.
- Use of Williwa Street Cottages as residential or artist's residents.

Tourism opportunities

An ongoing use of tourism should be encouraged for the site. Possible uses could include:

- Bushwalking.
- Camping and caravanning.
- Cycling.
- Heritage information and visitor centres.

Interpretation

Any re-use must include some degree of interpretation effort. Interpretation is all about communicating and presenting the significance of a place. Interpretation through the care of the fabric is central to its heritage conservation. However, most people need information to understand the heritage significance of a place and interpretation is the means of providing this information. Interpretation can include a variety of ways and media and may include:

- The opportunity for new buildings or structures to encompass ideas and interpret the site. These may include using Historic precincts (Section 2.9) and Historic themes (Section 2.11). For example interpreting disused functions such as the old railway line or naming new design elements after precincts or demolished structures.
- Booklets, brochures and interpretative sign boards around the place itself e.g. Signs of Yesteryear (Historic signs of Portland)
- Displays set up in the significant buildings selected for re-use.
- Oral histories taken from the people who used to work at Portland Cement Works.
- Tours of the Portland Cement Works for university students, or other tourist groups.
- Open days.
- Commemorative and celebratory events.
- Events for special interest groups e.g. National Trust, Engineer Associations.
- Artist in residence program.
- Artefact display; incorporate machinery, equipment, fixtures and fittings.
- Use of site signage, walkways, platforms and barriers to highlight precincts and movement through the site
- Use of lighting and soundscapes.

7. Heritage Conservation Policies

7.1 Conservation polices

The Australia ICOMOS Burra Charter, known as The Burra Charter is widely accepted in Australia as the underlying methodology by which all works to sites/buildings which have been identified as having national, state and regional significance, are undertaken. There are seven principles that guide the care of heritage places:

1. The place itself is important
2. Understand the significance of the place
3. Understand the fabric
4. Significance should guide decisions
5. Do as much as necessary, as little as possible
6. Keep records
7. Do everything in a logical order

The use of the terms, *conservation, preservation, reconstruction, adaptation, fabric, maintenance, repair and compatible use* in this report are defined in the *Burra Charter* in Appendix 3.0.

Policy 1. Burra Charter	Future work on the place should be in accordance with the principles of the Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (the Burra Charter) and its Guidelines.

7.2 Significant Elements

Much of the cultural significance of the Portland Cement Works is embodied in the physical fabric of the place. Section 5.0 of this CMP sets out grading scale for significant elements ranging from those elements of exceptional significance down to those that are intrusive. It follows that conservation action should be related to an element's relative level of significance. The buildings/structures are graded in Annex 1.

The Portland Cement Works contains a number of buildings with fixtures, fittings, equipment and machinery that contribute to the overall significance of the building and the site as a whole. These items should be identified, recorded and assessed.

Policy 2. Significant elements	• Conservation action should be appropriate to the level of significance of individual elements. • Identify, record and assess significant fittings, fixtures, equipment and machinery and conserve these to the appropriate level of significance. • Undertake a detailed grading of significance for each element and its associated features/component.

7.3 Urgent Repairs

Repair works have been identified in Annex A for each heritage element under *Recommendations*. A detailed assessment and schedule of works for each heritage element should be undertaken. Priority should be given to repairing elements of **exceptional and high significance**. Urgent repairs are focussed on making the buildings and structures watertight and structurally stable. Urgent repairs include those that involve adequate weatherproofing, fire protection, security and essential maintenance, as detailed in

Minimum Standards of Maintenance and Repair as (Heritage Office, 1999) and implemented by Section 118 of the Heritage Act.

Policy 3. Urgent Repairs	Repairs involving weatherproofing, fire protection, security and essential maintenance outlined in *Minimum Standards of Maintenance and Repair (Heritage Office, 1999)* should be implemented as a matter of priority. Urgent repairs should be carried out within the next 12 months of commencement of this CMP. A detailed assessment and schedule of works for each heritage element should be undertake with priority given to repairing element of exceptional and high significance.

7.4 Conservation works

An overview of conservation works have been identified in Annex A for each heritage element under *Recommendations*. A detailed assessment and schedule of works for each heritage element should be undertaken, with an emphasis on those elements of exceptional significance. The approach to conservation works should be in line with Burra Charter principles – as much as necessary; as little as possible. The buildings and structures have a patina of time that is an important element of their heritage significance. A gentle approach is recommended.

Policy 4. Conservation works	• Conservation works should be undertaken within the nominated timeframes. • The approach to these works should be as much as necessary and as little as possible.

7.5 Maintenance schedule

A detailed Maintenance Plan should be identified for each heritage element and the site as a whole that identifies short, medium and long-term activities. Regular maintenance is essential to the ongoing conservation of heritage buildings and structures.

Policy 5. Maintenance Works	• A Maintenance Plan should be adopted for each heritage element and the site as a whole. • The Maintenance Plan should identify short, medium and long-term activities. • The Maintenance Plan should also identify preventative measures that incorporate a cyclical inspection regime and recording. • A dedicated budget should be allocated for maintenance works.

7.6 Colour schemes and finishes

When repainting, the choice of paint colours should be based on an understanding of original colours and finished used – through documentary and analysis of physical evidence (e.g. paint scrapes). Original colour schemes should be re-instated for the exteriors of the significant buildings and structures.

Policy 6. Original colour schemes and finishes	• Painted elements of the buildings should be repainted in the original colour schemes. • Do not paint unpainted areas such as face brickwork. • Original colour schemes and finishes should be derived from an assessment of documentary and physical evidence.

7.7 Remediation and rehabilitation

Remediation and rehabilitation works to any remaining areas should be undertaken as a priority.

Policy 7. Remediation and rehabilitation	• Undertake any remediation and rehabilitation works to any remaining areas as matter of priority.

7.8 Compatible Uses

The Portland Cement Site Works has two phases of development and has been in continuous use as a lime and cement manufacturing plant with administrative and ancillary functions associated with this use. The original use of the site is although considered its most appropriate use, its reinstatement is highly unlikely due to a number of inefficiencies including; modernisation and mechanisation of the cement industry and the remote location of Portland town. The site also evidences a mixed use facility with administrative, civic and residential buildings. A mixed use facility may be the most appropriate use.

Policy 8. Compatible uses	• A new use should be found that will ensure the sites long term viability as a heritage items of State significance. • A mixed use facility is the most appropriate use of the site.

7.9 Adapting the buildings

Overall planning should respect the original sizes, room layouts and cultural significance of each building, when considering proposed uses for these buildings.

Policy 9. Adapting the buildings	The size and configuration of the heritage building should dictate the use; the use should not result in unsympathetic alterations to significant buildings.

7.10 Interpretation

The Portland Cement Site Works should be interpreted with an Interpretation Plan and design prepared by suitably skilled and experienced persons. This strategy should include suggestions raised in Section 6 and be appropriately funded.

Policy 10. Interpretation	• An Interpretation Plan should be prepared for the Portland Cement Works. • The Plan should incorporate Historic precincts and Historic themes.

7.11 Signage and external lighting

Signage and external lighting can add to the character of the site. Signage and lighting should not adversely affect the significant heritage fabric and overall character of the site. When installing signage, the fixings should be reversible and not damage significant fabric.

Policy 11. Signage and external lighting	• Signage and lighting should be in harmony with the historic character of the site. • Free standing signage systems should be used for major directional signs with smaller signs applied to selected areas with a minimum of fixings. • Signs should not be attached to the brickwork walls of the buildings.

7.12 Services

The insertion of any new services should be carefully considered and take into account the original structure and fabric of the heritage buildings to minimise impact.

Policy 12. Services	• Electronic security and fire alarm systems should be used instead of fitting grilles and mesh to doors and windows. • Services should be minimised in their extent and service runs carefully planned to minimise damage to significant fabric. • Services should be run in existing conduits and ducts wherever possible. • Ceiling-mounted fittings, such as detectors and light fittings with minimal fixings are recommended. • Surface-mounted vertical risers are permitted, provided their style and finish is compatible with the cultural significance of the space through which they pass. Wherever possible, vertical risers should be located in minor spaces of least cultural significance. • Light fittings and electrical accessories (switch plates, GPOs) should not be period reproductions but discrete modern fixtures. • Air-conditioning units should be discreet in location and appearance. Any associated works should be positioned to avoid damage to significant fabric. • External air-conditioning units should be concealed from view, not located on the front façade of the building and positioned to avoid damage to significant external fabric.

7.13 New Building

The Portland Cement Works is State significant and scope for new development on items identified as Exceptional or High significance should be limited. No external alterations or additions should occur except minor additions for services, concealed from public view. Minor internal alterations may occur in these buildings and confined to areas of less significance

Policy 13. New building	• Introduction of new fabric should not lessen the cultural significance of the place. • New work should be identifiable and where possible be reversible without damage to significant fabric.

7.14 Ordinance Compliance

The Building Code of Australia is the operative building ordinance in New South Wales for the conservation and re-use of heritage buildings.

Policy 14. Ordinance compliance	• Compliance with the Building Code of Australia should focus on responding to the spirit and intent of the ordinances if strict compliance would adversely affect the significance. An alternative engineered solution may need to be sought if deemed-to-satisfy provisions cannot be met. Uses which require an unacceptable degree of intervention for upgrading to code compliance should be avoided. • Appropriate funding arrangements for maintenance and urgent repairs identified in this CMP should be put in place by AWJ Civil.

7.15 Management

The Portland Cement Works site should ideally remain in the ownership and under the management of a single entity. It is good management practice to put into place a maintenance plan that will regularly monitor the condition of the site and attend to minor maintenance issues before they become major issues. Systematic maintenance will also conserve significant fabric longer for the ultimate benefit of future generations.

Policy 15a. Management	• A comprehensive long-term maintenance plan with a dedicated budget should be implemented to guide on-going maintenance work on the significant elements identified in this CMP. • Appropriate funding arrangements for maintenance and urgent repairs identified in this CMP should be put in place by AWJ Civil.

To prevent the gradual loss of cultural significance through incremental change, a mechanism for controlling any modifications undertaken by future tenants to the significant fabric needs to the established.

Policy 16b. Tenancy	All tenants of the buildings should be made aware of the cultural significance of the item. Any modifications that are proposed by tenants should be installed and removed without any impact.

This conservation management plan was prepared using a range of expert advice. For successful long-term interpretation and implementation of this Plan, continuity of competent advice is important to avoid ad-hoc or ill-advised decisions.

Policy 16c. Expert advice	Persons with relevant expertise and experience in conservation projects should be engaged for the resolution of conservation issues, as well as for input into the design and administration of conservation work on the place

While the majority of issues dealt with in this plan are unlikely to change, changes in use, tenure or legislation may require consideration of new or different information affecting the conservation management of the place. The plan should respond to any changes in circumstances.

Policy 16d. Plan review	• A complete review is required 10 years after commencement, or when major changes that significantly affect the place occur, such as major refurbishments, disposal by the owners, change in use or significant damage to, or destruction of fabric including by natural disaster. • All reviews should amend the inventory of significant elements and include changes to descriptions of the physical condition of the fabric, as needed.

7.16 Archival material

A collection of archival material should be kept for reference and available to those undertaking aspects of conservation works. These include; plans, specifications, reports, photographs and future maintenance plans. A copy of appropriate material should also be issued to local council and Heritage Division Library.

Policy 17. Archival material	• Keep a collection of archival material available to those undertaking aspects of conservation works including; plans, specifications, reports, photographs and future maintenance plans. • Provide a copy of relevant material to local council and Heritage Division Library.

7.17 Movable items

There are a number of movable items associated with The Portland Cement Works that should be assessed and recorded by suitably qualified persons and conserved on site or protected in off-site storage.

Policy 18. Movable items	• Movable items should be assessed and recorded by suitably qualified persons and conserved on site or protected in off-site storage. • Movable item should be assessed for suitability for incorporation in an Interpretation Plan for the site.

7.18 Archival recording

An archival photographic record of any fabric or equipment that is proposed and approved to be removed should be prepared by a suitably qualified heritage specialist in accordance with the *Photographic recording of heritage items using film or digital capture* (Heritage Office 2001, revised 2006) guideline. The record should aim to capture the item prior to, during and after the proposed works. A copy of the archival record be provided to the local council and the Heritage Division library.

Policy 19. Archival recording	• Undertake an archival photographic record of any fabric or equipment that is proposed and approved to be demolished. The works should comply with *Photographic recording of heritage items using film or digital capture* (Heritage Office 2001, revised 2006) guideline. • Provide a copy of the archival record to local council and the Heritage Division library.

7.19 Archaeological monitoring

Area of high archaeological potential have been identified at the subject site. If excavation is proposed in these area further investigation by a suitably qualified archaeologist would be required prior to the commencement of works.

Policy 20 Archaeological monitoring	• Any excavation in areas of high archaeological potential should be carried out under archaeological supervision by a qualified archaeologist.

7.20 Masterplan policies

7.20.1 Planning and infrastructure

Careful consideration should be given to locating entry points, new roads, buildings and infrastructure within the site so as not to adversely affect the significant heritage fabric and overall character of the place. An analysis of the site's historic circulation routes, interrelationship between built elements and location of mains services should form the basis of any new proposed work.

Policy 21. Planning and infrastructure	• Location entry points, new roads, buildings and infrastructure should be based on analysis of historic circulation routes, interrelationship of built elements and location of mains services.

7.20.2 Siting and design in historic precincts

Locating and design of new buildings and structures within heritage precincts should respect the heritage precinct's curtilage, form and character so as not to compete with the historic items. Propose new materials and finishes should also be sympathetic.

- Raffan's Mill and Brick Bottle Kilns Precinct (1882-1899) – Industrial use
- Williwa Street Cottages Group Precinct (1882-1899) – Residential use, group of buildings, streetscape character
- Cement Processing Precinct (1899-1998) – Industrial use
- Cement Administrative Precinct (1899-1998) – Commercial use

Policy 22. Siting and design in Heritage precincts	• The location and design of new buildings and structures should respect relevant Historic precincts in terms of curtilage, form and character. • The visual curtilage and views to and from the Portland Cement Works precinct and Raffan's Mill and bottle kilns precinct should be maintained and conserved. • New materials and finishes should be sympathetic.

7.20.3 Landscape design

A proposed masterplan should incorporate a landscape plan that identifies significant landscaped elements including; plantings, planter beds, paths and boundary fencing. A concept that retains respects elements of the industrial landscape and the different precincts should be integrated.

Policy 23. Landscape design	• Develop a concept landscape design that addresses historic elements including the character of historic precincts.

8. Implementation strategy

8.21 Asset management guidelines

The following management processes should be implemented when considering the ongoing use of the building:

- This Conservation Plan should be included in any future sale documents in order that the enquirer or prospective purchaser is fully appraised of heritage requirements.
- It is highly desirable that the site be owned and managed by a single entity.
- Insurance cover for the building should be reviewed to acknowledge the areas of significance.
- Regular BCA reporting on emergency services as required.
- A building maintenance program should be implemented.

8.22 Monitoring and review

This Conservation Management Plan proposes a framework for the management of heritage issues into the long term. Conservation Policies need to progressively respond to changing situations if they are to remain relevant. Conservation Policies should be reviewed every five years or subsequent to major programmes of upgrading or changes in ownership and should reflect latest relevant legislation and conservation practices. Reviews should be carried out by experienced Conservation Practitioners.

- A complete review of this Plan is required 10 years after commencement, or when major changes that significantly affect the place occur, such as major refurbishments, disposal by the owners, change in use or significant damage to, or destruction of fabric including by natural disaster.
- A maintenance plan, once developed should be reviewed on an annual basis. Completed action items are to be removed and any new action items identified are to be added.
- All reviews should amend the inventory of significant elements and include changes to descriptions of the physical condition of the fabric, as needed.

8.23 Consultant skills

This conservation management plan was prepared using a range of expert advice. For successful long-term interpretation and implementation of this Plan, continuity of competent advice is important to avoid ad-hoc or ill-advised decisions.

References

Secondary Sources

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NSW Heritage Assistance Program, 1993/1994. *Portland Cement Company 1899 Stephenson Locomotive Restoration, Project Number 94 450*

Primary Sources

Maps

https://maps.six.nsw.gov.au/

LPI, 1964 aerial photograph

LPI, 1994 aerial photograph

Photographs

Graham Harvey http://www.nswrail.net/locations/show.php?name=NSW:Portland+Cement+Works

Annex 1 – Heritage elements: Heritage Assessment

1. Powerhouse (Engine House)

1.1 Condition Assessment

Condition Assessment		
Item No: 1	**Item Name: Powerhouse (Engine House)**	
	 **Plate 1: Powerhouse south elevation showing face brickwork and arched windows partly boarded up and missing glazing.**	
Description:	The Powerhouse building is a Federation Classical style with its southern façade being the most distinctive feature. The building is constructed of face brickwork with arched openings. The building has been altered in the early 20th century and these areas are easily identified by way of varying characters in brickwork. The interior consists of one large main room with a Switchboard room (located south), Eastern room and Machinery room (located west).	
Condition:	**Poor/Fair**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Some broken and missing brickwork. Circular window has been moved. Presence of fire retardant spray.
	South elevation:	Brickwork in good condition with minor cracks.
	East elevation:	Broken and missing brickwork. Presence of paintwork to walls.
	West elevation:	Broken and damaged brickwork. Unsympathetic brick infills.
	Roof and roof fittings:	Generally missing gutters and downpipes. Missing details to timber fascia boards. Corrugated iron roof is in poor condition.
	Interior	
	Floor:	Material: Cement. Poor to fair. Cracked, uneven floor and rubble and debris in areas. Switchboard room (located SE corner): Linoleum is unsympathetic addition. Machinery room (located SW): Moisture in some areas. Eastern room: Cement floor is broken and in poor condition.
	Walls:	Material: Brickwork Missing bricks and cracked brickwork especially in archways. Some walls have missing mortar joints. Wall finish deteriorated in some areas. Unsympathetic infill brickwork in areas. Moisture and moss on some walls. Switchboard room: Timber panelling to walls. Broken balustrade. Machinery room: Unsympathetic infill brickwork and new walls in areas. Moss on some walls and openings. Missing mortar joints to brickwork.

Condition Assessment		
Item No: 1	**Item Name: Powerhouse (Engine House)**	
		Eastern room: Missing and broken brickwork.
	Doors:	Material: Timber and glass panelled door (south entry), metal roller door (north entry). South entry door: Timber has rot and damage and missing glazed panels. Switchboard room: Timber has some rot and damage. Machinery room: Timber service door (south wall) has missing panels and damage to timber. Door opening infilled with brickwork.
	Windows:	Material: Timber frame and glass panelling. Broken and missing glazing. Windows are generally boarded up. Windows frames in reasonable condition. Highlight windows (Lantern roof): Metal louvres are dirty. Switchboard room: Broken glazing and timber frames, some windows are infilled with brickwork. Machinery room: Broken windows and steel mesh to some windows. Eastern room: Large arched multi-paned casement window. Missing glazing. Frames in good condition. Unsympathetic infill wall at floor level.
	Ceiling/Roof:	Material: Exposed steel truss. Fair condition. Eastern room: timber beams added.
	Equipment:	Gantry in fair to good state.
	Structural assessment:	Equipment and machinery requires assessment to determine if the current structure is stable and can continue to support the load of the equipment.
	Condition Legend	
	Good	Structurally sound. Requires little attention
	Fair	Structurally sound. Requires minor repair
	Poor	Signs of extensive damage, Requires attention
Integrity:	**High**	
	Integrity Legend	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation
Significance Grading:	**Exceptional**	
Recommendation:	Assess moisture and presence of moss on walls and floors and implement measures to prevent water ingress to building. Repair missing and broken glazing and timber to doors and windows. Floors generally require cleaning and removal of rubble. Install general lighting and other services to make rooms habitable. If repainting is proposed for this structure, undertake paint scrapings to identify original walls finish and colour. Use machinery and equipment as part of a future Interpretation Plan for the building. Structural assessment required.	

Condition Assessment

Item No: 1	Item Name: Powerhouse (Engine House) Photographs (Niche 2017)

Plate 2: Part west elevation showing original building (left), additions to south façade (centre and right).

Plate 3: Part west elevation showing original building (left) additions (right with lighter brickwork).

Plate 4: Part west elevation looking towards south showing amalgamation of building via infill 1909-1914 (centre).

Plate 5: Part west elevation showing original building with some discolouration on brickwork caused by moss.

Plate 6: North elevation showing original building.

Plate 7: Part east elevation showing original building with paint finish.

Plate 8: South eastern view showing eastern room.

Plate 9: South western corner of building showing moss on wall.

Condition Assessment

Item No: 1	Item Name: Powerhouse (Engine House) Photographs (Niche 2017)

Plate 10: Detail area of west elevation showing damage to brickwork, infilled openings, brick plinth and broken glazing.

Plate 11: Detail are of west elevation showing unsympathetic patchwork to bricks.

Plate 12: Interior looking north showing gantry.

Plate 13: Interior looking north showing roller door to north façade.

Plate 14: Interior looking south showing exposed trusses.

Plate 15: Interior looking west showing boarded windows.

Plate 16: Interior showing lantern style secondary roof above.

Plate 17: Interior eastern wall showing unsympathetic infill brickwork.

Condition Assessment	
Item No: 1	**Item Name: Powerhouse (Engine House) Photographs (Niche 2017)**

Plate 18: Interior looking east showing infill brickwork to opening, presence of moss on walls.

Plate 19: Interior looking west showing remnant equipment and access platforms.

Plate 20: Broken and missing brickwork on column.

Plate 21: Broken and missing glazing.

Plate 22: Machinery room (located south west) shows unsympathetic infill brickwork.

Plate 23: Switchboard room showing painted timber panelling and glass panels.

Condition Assessment	
Item No: 1	**Item Name: Powerhouse (Engine House) Photographs (Niche 2017)**

Plate 24: Switchboard room showing steel frame floor above and broken glazing.

Plate 25: Switchboard room showing timber joinery.

Plate 26: Entry door to south elevation showing missing glazing panels and damage to timber door.

Plate 27: Machinery room showing unsympathetic brick infill to window opening, timber service door with concrete ramp.

Condition Assessment	
Item No: 1	**Item Name: Powerhouse (Engine House) Photographs (Niche 2017)**

Plate 28: Machinery room showing unsympathetic brick infill to archway and severe moisture issues to west wall.

Plate 29: Machinery room showing unsympathetic brick wall additions and moisture issue to floor.

Plate 30: Machinery room showing unsympathetic brick wall additions and infills.

Plate 31: Machinery room showing unsympathetic brick wall additions.

Plate 32: Machinery room showing unsympathetic brick wall infills in doorway.

Plate 33: Machinery room showing open steel truss roof.

Condition Assessment	
Item No: 1	**Item Name: Powerhouse (Engine House) Photographs (Niche 2017)**

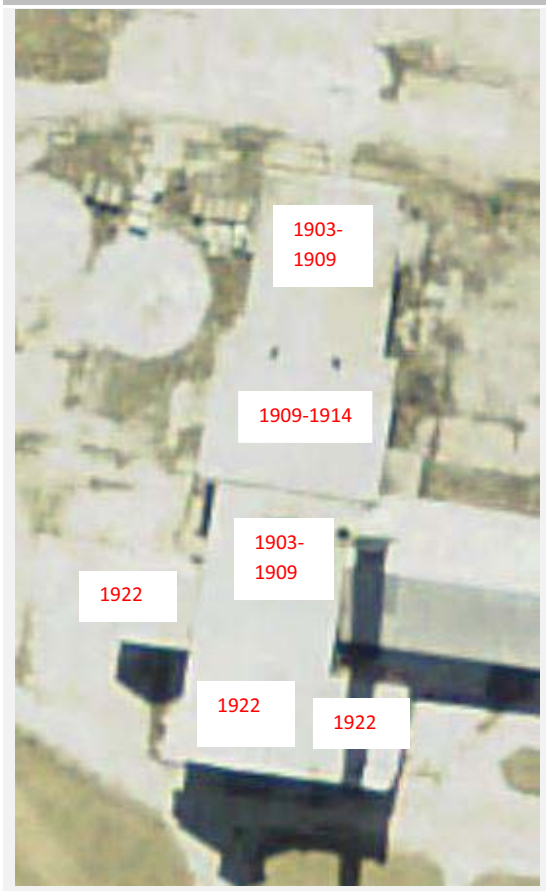
Plate 34: Eastern room showing damage to brickwork, timber framed windows and rubble floor.

Plate 35: Eastern room showing

Plate 36: Eastern room showing timber beams insertion to steel truss roof.

Plate 37: Eastern room showing damage to brick openings.

1.2 Documentary Evidence

Documentary Evidence	
Item No: 1	**Item Name: Powerhouse (Engine House)**
Building modifications	 **Plate 38: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
The Powerhouse was originally built as two separate buildings, but joined by 1910. The southern end of the building was also extended around the same time. Also at this time, the overhead gantry crane was extended through the entire Powerhouse. A number of changes were made internally over the operation period of the Powerhouse to support new machinery (SHR Listing Database No. 5055017). A *large brick building, GI roof on steel principals of fireproof construction, cement floor, (wooden floor in one part) packed with valuable machinery* (HA 1993:26).	
Building timeline:	
1900-1903	Powerhouse and electric powerhouse built as two separate buildings.
1909-1914	Several extensions between 1909 and 1914 amalgamated the buildings.
1922	Building extended to create the current south façade. South east room constructed.
Machinery:	
1900-1903	Tange engine, Compound Yates & Thom Engine, phase generator, overhead cranes, compound lighting engine
1905-1906	Compound engine, Phase generator, Main Line shaft extending into Raw and Cement Mills
1915	Large mill engines
1917	Mill extension drive, shafting pulleys
1921	Small horizontal engines

Documentary Evidence	
Item No: 1	**Item Name: Powerhouse (Engine House)**
1924	Additional machinery installed and alterations made to change over to electric drive on the Mills

Early plans/photographs:

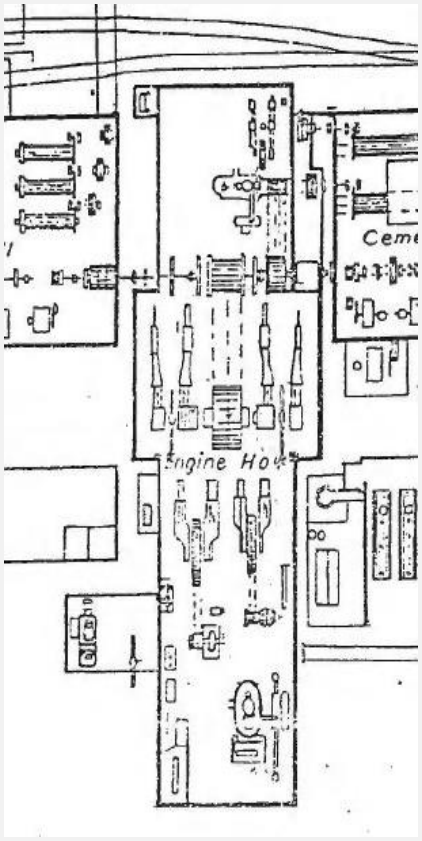


Figure 1: Plan of the Works 1918 (Source: as cited in Fenwick 1993).

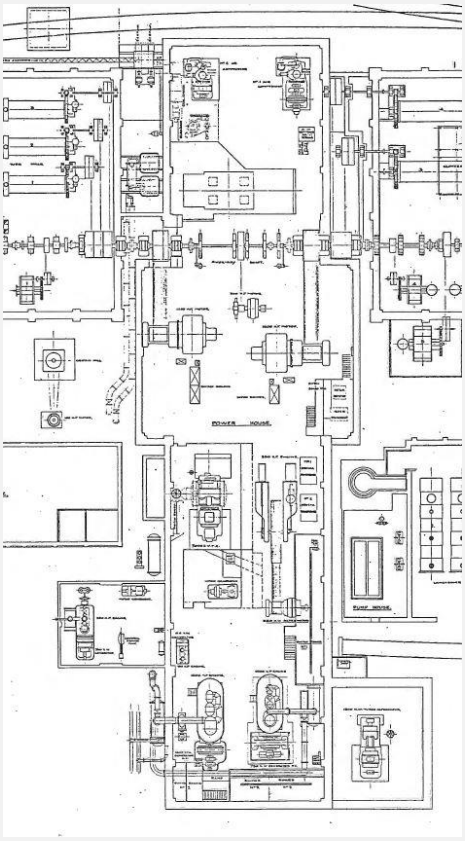


Figure 2: Plan of the Works 1940 (Source: as cited in Fenwick 1993).

Plate 39: View of Powerhouse building looking North East shows building as two structures and smaller building located west (Source: 1904 Promotional booklet BCSC Head Office Library as cited in Fenwick 1993:10)

Documentary Evidence

Item No: 1	Item Name: Powerhouse (Engine House)

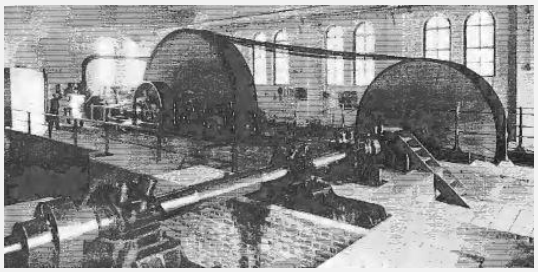


Plate 40: Steam Engine Driving Mill Line Shaft (Source: 1904 Promotional booklet BCSC Head Office Library as cited in Fenwick 1993:26)

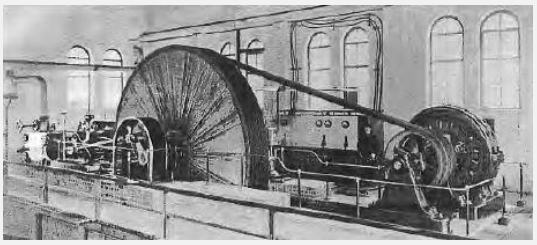


Plate 41: H10 360 Kilowatt Alternator (Source: 1904 Promotional booklet BCSC Head Office Library as cited in Fenwick 1993:26)

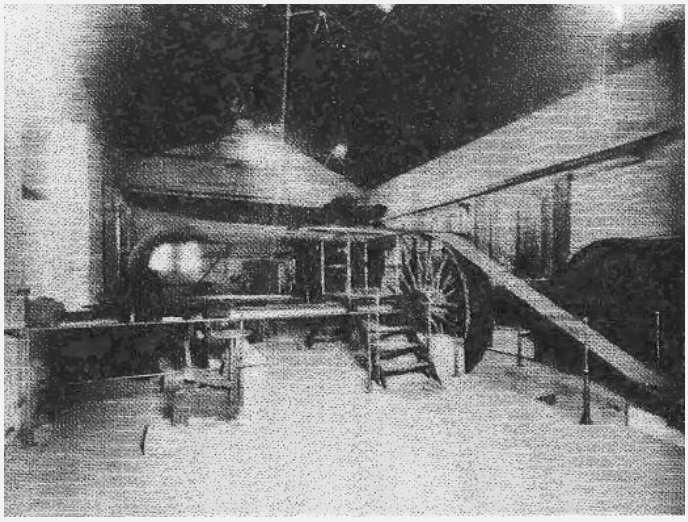


Plate 42: Mill Line Shafts and Auxiliary Motor (Source: 1927 Album – C. Pinch as cited in Fenwick 1993:28)

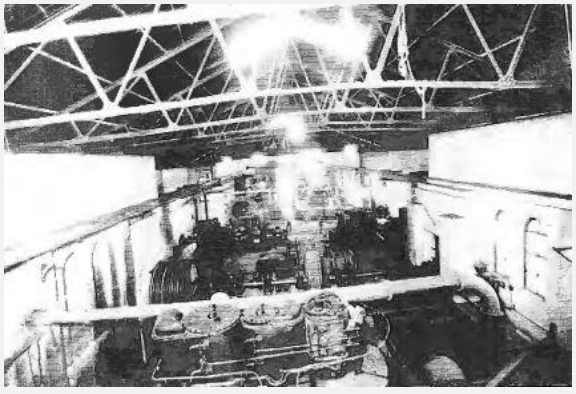


Plate 43: Inside the Powerhouse from North end (Source: 1927 Album – C. Pinch as cited in Fenwick 1993:25)

Plate 44: Inside the Powerhouse from Southern end (Source: 1927 Album – C. Pinch as cited in Fenwick 1993:25)

Documentary Evidence

Item No: 1	Item Name: Powerhouse (Engine House)

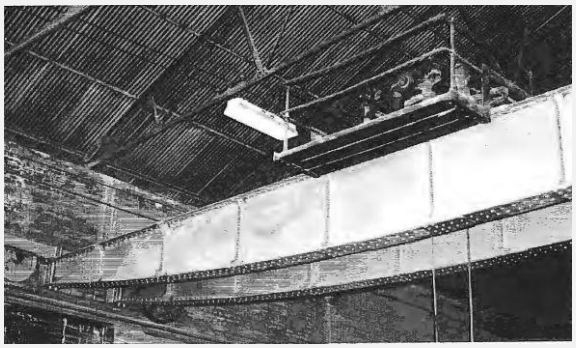


Plate 45: Powerhouse Manually operated overhead travelling crane (Source: Fenwick 1993:P54)

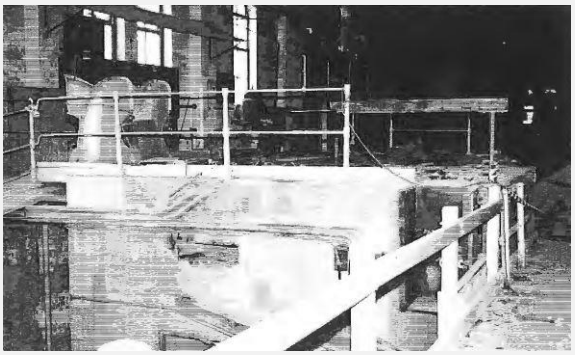


Plate 46: Foundations for 3000 Kilowatt Turbo Alternator (Source: Fenwick 1993:P53)

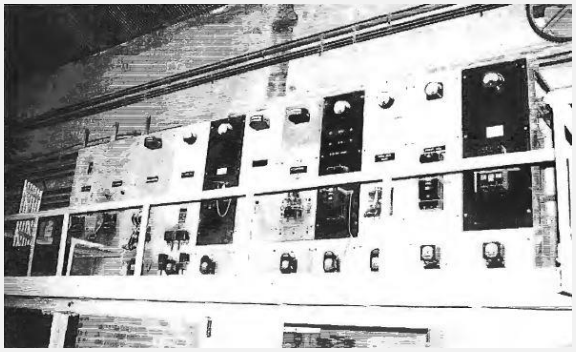


Plate 47:Elevated 6600 Volt Marble Switchboard (Source: Fenwick 1993:P52)

1.3 Significance Assessment

Significance Assessment	
Item No: 1	**Item Name: Powerhouse (Engine House)**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Powerhouse building has direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the primary buildings built for the production of cement.
(b) Associative significance	The Powerhouse building has direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia.
(c) Aesthetic significance	The Powerhouse building is a fine example of the Federation Classical industrial style of building.
(d) Social significance	The Powerhouse building is a landmark to the town of Portland and has local social significance for its relationship between The Portland Cement Company and the township.
(e) Research potential	The Powerhouse building has the potential to yield further technological information on the early production of cement.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	The Powerhouse building is a fine example of an industrial building of the era consisting of machinery and equipment that related to the cement manufacturing industry.
Previous Assessments:	*While the (former) Portland Cement Works Site is of local significance as 'the heart of Portland', it is of State significance for begetting 'the town that built NSW'. The Processing and Administrative area retains significant built fabric, including the Federation era Powerhouse and Boiler House chimney that are recognised landmarks for the community and district. (Nomination for SHR Listing)*
Summary statement of significance:	The Powerhouse building is of State significance for its historical relationship with the Second Phase of The Portland Cement Works. The building has a direct association with Dr August Scheidel, the father of modern cement industry in Australia and is a fine example of a Federation Classical industrial building.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

2. Boilerhouse and Chimney

2.1 Condition Assessment

Condition Assessment		
Item No: 2	**Item Name: Boilerhouse and Chimney**	
	 **Plate 48: Boilerhouse and Chimney north elevation showing damage to windows and deteriorated roof.**	
Description:	The Boilerhouse building is designed in the Inter-war Functionalist style. The building is constructed of painted brickwork with predominantly rectilinear openings. The building has been altered in the early 20th century and these areas are not easily distinguishable. There are three large rooms located within the building (West, Central and East rooms). The eastern room includes a mezzanine level. Later additions include two rooms to the south elevation and an additional room within the East room. The Chimney is circular in shape, of face brick with iron banding at intervals. It tapers to a brick corbelling detail to the lip.	
Condition:	**Fair**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Generally broken and missing brickwork. Evidence of water ingress to walls. Central room: Walls show water ingress and plant growth on gutters.
	South elevation:	Brickwork in fair condition with minor cracks and missing bricks. Evidence of water ingress to lower part of walls. Later additions: Part open enclosure (fair condition), Face brick room to western end (not accessed).
	East elevation:	Broken and missing brickwork.
	West elevation:	Broken and damaged brickwork. Unsympathetic brick infills.
	Roof and roof fittings:	Generally missing gutters and downpipes. Corrugated iron roof is in poor condition and requires closer inspection and assessment.
	Chimney:	Fair condition. Iron banding has some corrosion. Brick corbelling has some moss growth.
	Interior	
	Floor:	Material: Concrete, Timber (mezzanine). Fair condition.
	Walls:	Material: Painted brickwork. West room: Broken and missing bricks to west wall and gable end. East room: Minor cracks to brickwork. Unsympathetic addition includes central room with lightweight chipboard lining and face brickwork walls.

Condition Assessment			
Item No: 2	**Item Name: Boilerhouse and Chimney**		
	Doors:	Material: Timber and glass panelled door (south entry), metal roller door (north entry), Timber sliding door (Central room). South entry door: Double swing door has missing glazing panels and damage to timber leaves. North entry door: Track and timber door are damaged.	
	Windows:	Material: Steel frames. Partly boarded up. Frames corroded in some windows. Missing and broken glazing generally. Bird proof mesh to some windows are broken. East room: Unsympathetic brick infill to windows on north wall.	
	Ceiling/Roof:	Material: Exposed steel truss. Fair condition.	
	Equipment:	East room: Furnace to centre of room. Timber joinery.	
	Structural assessment:	Assessment of Chimney required.	
	Condition Legend		
	Good		Structurally sound. Requires little attention
	Fair		Structurally sound. Requires minor repair
	Poor		Signs of extensive damage, Requires attention
Integrity:	**Medium**		
	Integrity Legend		
	High	Major features contributing to significance are intact	
	Medium	Retains sufficient features to allow historical interpretation	
	Low	Major features are altered diminishing the ability for historical interpretation	
Significance Grading:	**High**		
Recommendation:	Assess moisture and moss on walls and floors and implement measures to prevent water ingress to building. Repair missing and broken glazing and timber to doors and windows. Floors generally require cleaning. Install general lighting and other services to make rooms habitable. If repainting is proposed for this structure, undertake paint scrapings to identify original wall finish and colour. Investigate underground structures if any are present. Structural assessment of Chimney required.		

Condition Assessment	
Item No: 2	**Item Name: Boilerhouse and Chimney, Photographs (Niche 2017)**

Plate 49: Boilerhouse north elevation showing roof, walls and windows in poor condition.

Plate 50: Boilerhouse part south elevation with later addition (single storey building in front).

Plate 51: Boilerhouse part south elevation.

Plate 52: Part south elevation showing unsympathetic addition in face brickwork.

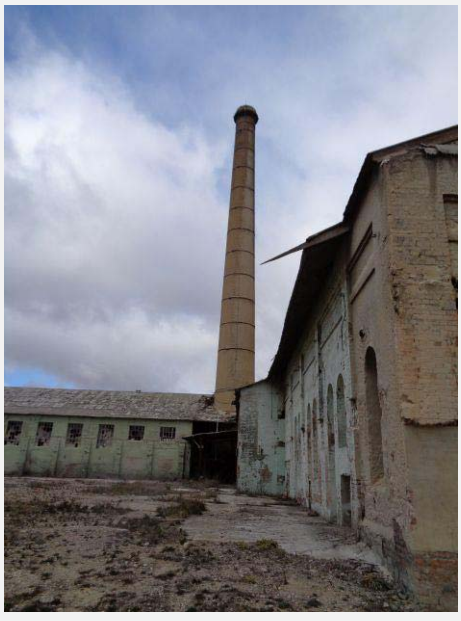


Plate 53: Part north elevation of Chimney and Boilerhouse (left).

Plate 54: Part south elevation of Boilerhouse and Chimney (right).

Condition Assessment

Item No: 2	Item Name: Boilerhouse and Chimney, Photographs (Niche 2017)

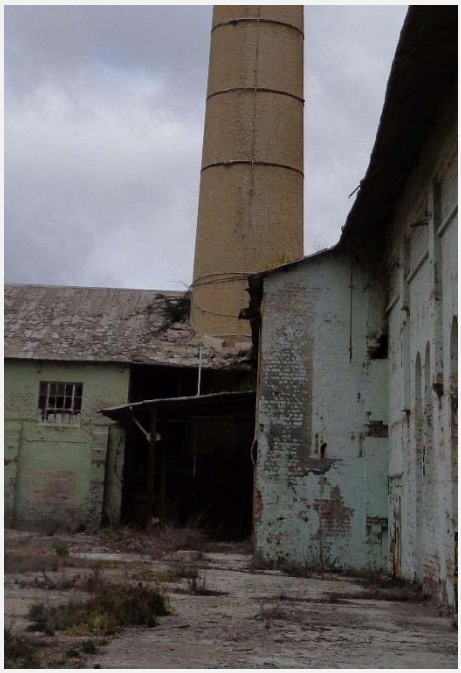


Plate 55: Part north elevation of Boilerhouse and Chimney showing access to Chimney base and roofs to Chimney area in poor condition.

Plate 56: Detail view of Chimney showing iron banding and brick corbelling.

Plate 57: View of in-ground tanks adjacent to Chimney on north elevation.

Plate 58: Part north elevation showing base of Chimney.

Plate 59: Interior of Western room showing rectilinear openings to north wall.

Plate 60: Interior of Western room showing exposed steel truss roof and west wall.

Condition Assessment	
Item No: 2	**Item Name: Boilerhouse and Chimney, Photographs (Niche 2017)**

Plate 61: Interior of Western room showing arched openings leading to Central room.

Plate 62: Interior of Western room showing part south wall.

Plate 63: Interior of Western room showing roller door to north wall and concrete ramp.

Plate 64: Interior of Central room showing sliding door leading to Western room.

Plate 65: Interior of Central room showing unsympathetic brick infill to opening in north wall.

Plate 66: Interior of Central room showing unsympathetic brick infill to opening in central eastern.

Condition Assessment

Item No: 2	Item Name: Boilerhouse and Chimney, Photographs (Niche 2017)

Plate 67: Interior of Eastern room showing mezzanine level, unsympathetic face brick addition.

Plate 68: Interior of Eastern room showing ramp to mezzanine level.

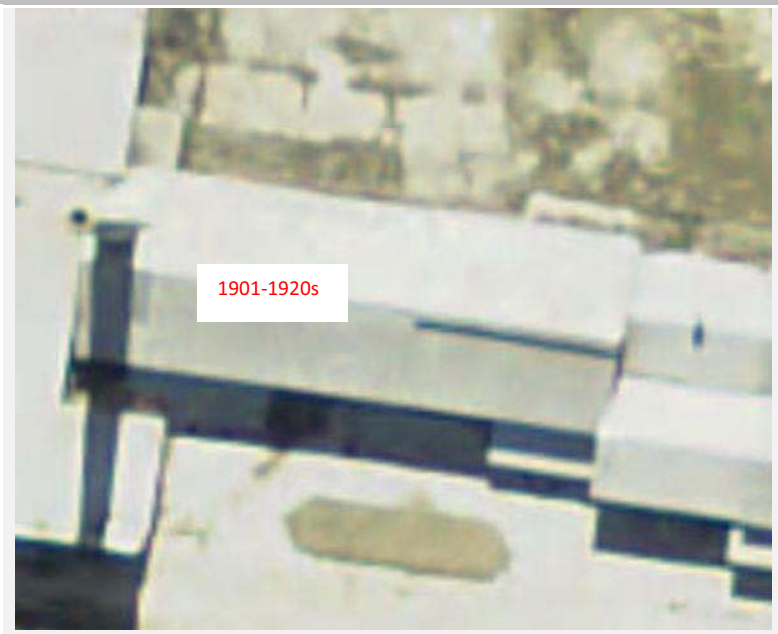
Plate 69: Interior of Eastern room showing unsympathetic addition with timber panelling to walls.

Plate 70: Interior of Eastern room showing unsympathetic addition with timber panelling to walls.

Plate 71: Interior of Eastern room showing view from mezzanine level.

Plate 72: Interior of Eastern room showing detail of mezzanine level.

2.2 Documentary Evidence

Documentary Evidence	
Item No: 2	**Item Name: Boilerhouse and Chimney**
Building modifications:	 **Plate 73: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
	The Boiler House and Chimney are brick construction with Core 10 sheet roofing (SOHI 2010).
Building timeline:	
1901	Boilerhouse and Chimney built.
1909/1910	Steel installed to Chimney
1913	Boilerhouse roof raised by 6 feet.
1916	Ash handline plant installed at south-east of Boilerhouse and altered in 1940.
1916	Underground Coal Hoppers built.
1920s	Arched windows on south side of Boilerhouse converted to rectangular openings and later bricked up.
1922	New stack and draught plant built to increase efficiency. These were used by the No 3 and No 4 Babcock & Wilcox boilers.
1952	Babcock & Wilcox boilers in bad repair and may not have been used after this time.
Machinery:	
1901	No 1, No 2 and No 3 Lancashire boilers 30x7 with Y & T motor
1904	Lancashire boiler (Morts Dock Co) installed dismantled in 1914
1909/1910	No 6 Babcock & Wilcox boiler installed
1911	No 7 Babcock & Wilcox boiler installed
1913	No 5 Babcock & Wilcox boiler installed
1914	No 4 Babcock & Wilcox boiler installed
Early plans/photographs:	

Documentary Evidence	
Item No: 2	**Item Name: Boilerhouse and Chimney**

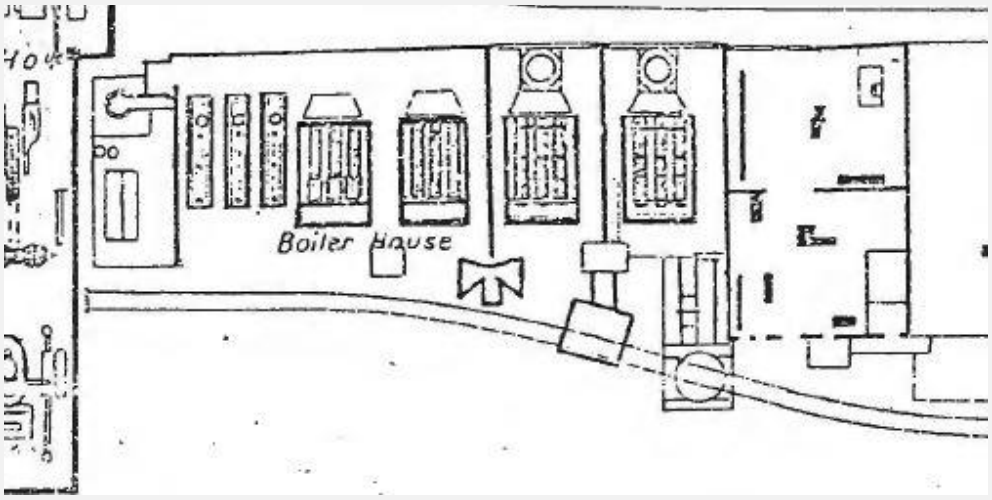


Figure 3: Plan of Works 1918 (Source: as cited in Fenwick 1993).

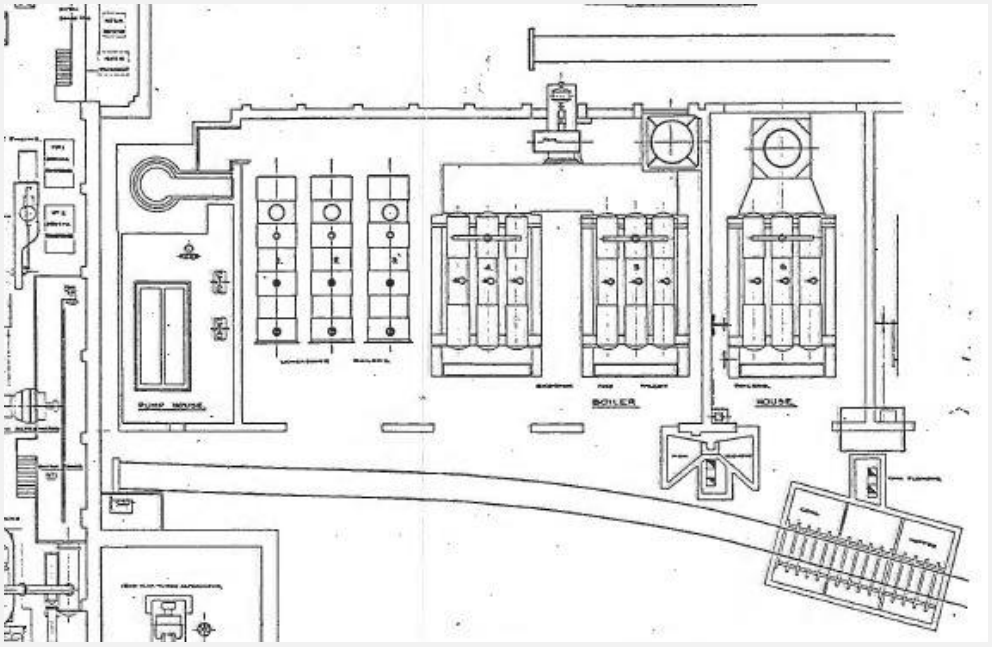


Figure 4: Plan of Works 1940 (Source: as cited in Fenwick 1993).

Documentary Evidence	
Item No: 2	**Item Name: Boilerhouse and Chimney**

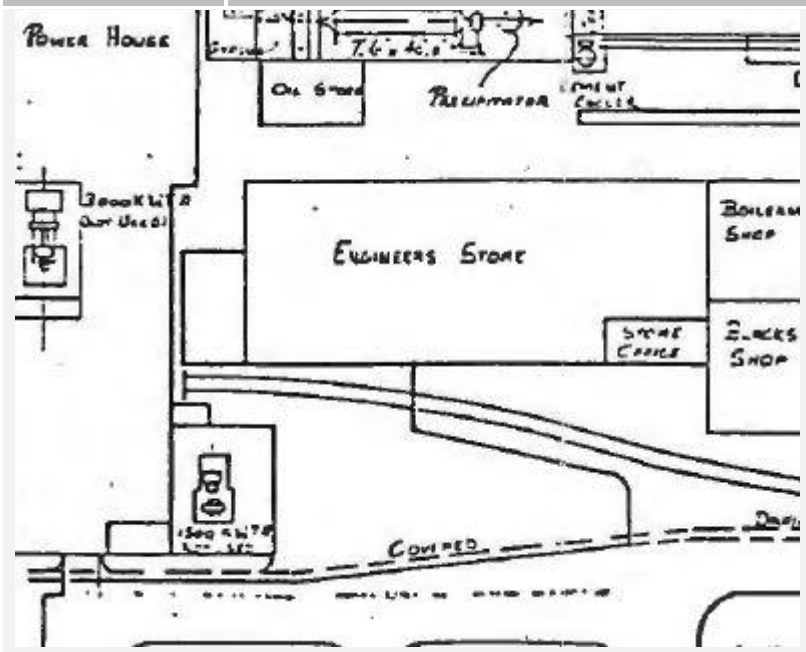


Figure 5: Plan of Works 1973 (Source: as cited in Fenwick 1993).

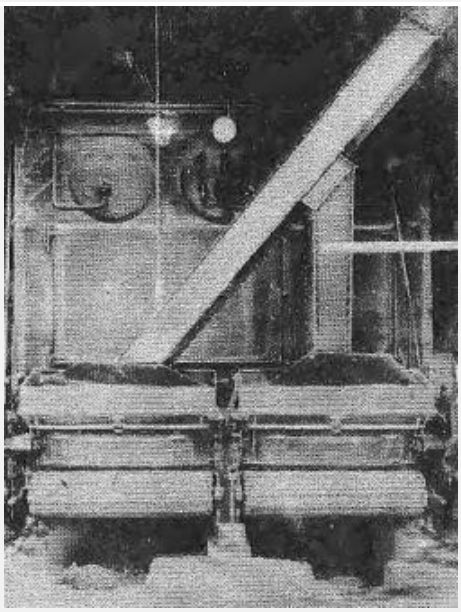


Plate 74: Babcock & Wilcox Boiler (Source: 1927 Album C. Pinch as cited in Fenwick 1993:28)

2.3 Significance Assessment

Significance Assessment	
Item No: 2	**Item Name: Boilerhouse and Chimney**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Boilerhouse and Chimney have direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the primary buildings built for the production of cement.
(b) Associative significance	The Boilerhouse and Chimney have direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia.
(c) Aesthetic significance	Does not satisfy this criteria.
(d) Social significance	The Chimney is a landmark to the town of Portland and has local social significance for its relationship between The Portland Cement Company and the township.
(e) Research potential	The Boilerhouse and Chimney have the potential to yield further technological information on the early production of cement.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	*The Powerhouse chimney is a local landmark within the town of Portland. (SHR Listing)*
Summary statement of significance:	The Boilerhouse and Chimney are of State significance for their historical relationship with the Second Phase of The Portland Cement Works. Both structures have a direct association with Dr August Scheidel, the father of modern cement industry in Australia. The Chimney is a landmark to the town of Portland.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

3. Boilermaker's / Blacksmith's Shop

3.1 Condition Assessment

Condition Assessment		
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop**	
	 **Plate 75: Boilermaker's / Blacksmiths Shop east elevation showing broken timber barge boards.**	
Description:	The Boilermaker's / Blacksmiths Shop is a combination of Federation Classical industrial and Interwar Functionalist style. The building is constructed of painted brickwork with mainly rectilinear openings. The building has been altered in the early 20th century and these areas are fairly identifiable by way of varying characters in brickwork and window treatment. The interior consists of two large rooms; Machine Shop (located east), Blacksmith's Shop (located west).	
Condition:	**Poor**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Paintwork deteriorated. .
	South elevation:	Broken and missing brickwork. Bird proof mesh damaged.
	East elevation:	Broken and missing brickwork, broken timber bargeboards.
	West elevation:	N/A
	Roof and roof fittings:	Generally missing gutters and downpipes especially to north façade where weeds have grown over guttering. Corrugated roof in fair condition.
	Interior	
	Floor:	Material: Cement. Fair condition with minor cracks and uneven floor in some areas.
	Walls:	Material: Painted brickwork Missing bricks and cracked brickwork in some areas. Western room walls especially are covered in moss.
	Doors:	Material: Timber and glass panelled sliding door (east entry), East entry door: Painted timber door and track is broken and damaged.
	Windows:	Material: Steel frame and glass panelling. Broken and missing glazing. Windows are partly boarded up. Windows frames show corrosion. Highlight windows (Lantern roof): Broken glazing.
	Ceiling/Roof:	Material: Exposed steel truss.

Condition Assessment		
		Corrosion to steel trusses. Water ingress through failed box gutter.
	Equipment:	Metal furnace and machine in Machine Shop.
	Structural assessment:	Required for roof structure.
	Condition Legend	
	Good	Structurally sound. Requires little attention
	Fair	Structurally sound. Requires minor repair
	Poor	Signs of extensive damage, Requires attention
Integrity:	**Medium**	
	Integrity Legend	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation
Significance Grading:	**High**	
Recommendation:	Assess moisture and presence of moss on walls and floor and implement measures to prevent water ingress to building. Repair missing and broken glazing and timber to doors and windows. Floors generally require cleaning and removal of rubble. Install general lighting and other services to make rooms habitable. If repainting is proposed for this structure, undertake paint scrapings to identify original walls finish and colour. Use machinery and equipment as part of a future Interpretation Plan for the building. Structural assessment required.	

Condition Assessment	
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop, Photographs (Niche 2017)**

Plate 76: Boilermaker's / Blacksmiths Shop part north elevation.

Plate 77: Boilermaker's / Blacksmiths Shop part north elevation.

Plate 78: Boilermaker's / Blacksmiths Shop part south elevation.

Plate 79: Boilermaker's / Blacksmiths Shop part south elevation.

Plate 80: Interior showing Fitting and Machine Shop room (eastern room).

Plate 81: Interior showing Fitting and Machine Shop room (eastern room).

Plate 82: Interior of Fitting and Machine Shop room (eastern room) showing office and amenities room.

Plate 83: Interior of Fitting and Machine Shop room (eastern room) showing office and amenities room.

Condition Assessment	
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop, Photographs (Niche 2017)**

Plate 84: Interior showing Fitting and Machine Shop room (eastern room).

Plate 85: Interior showing Fitting and Machine Shop room (eastern room).

Plate 86: Interior showing Fitting and Machine Shop room (eastern room) and debris on floor.

Plate 87: Interior showing Fitting and Machine Shop room (eastern room) with machinery.

Plate 88: Interior showing Boilermaker's / Blacksmith's Shop.

Plate 89: Interior showing Boilermaker's / Blacksmith's Shop.

Plate 90: Interior showing Boilermaker's / Blacksmith's Shop.

Plate 91: Interior showing Boilermaker's / Blacksmith's Shop with severe moss growth on walls.

Condition Assessment	
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop, Photographs (Niche 2017)**

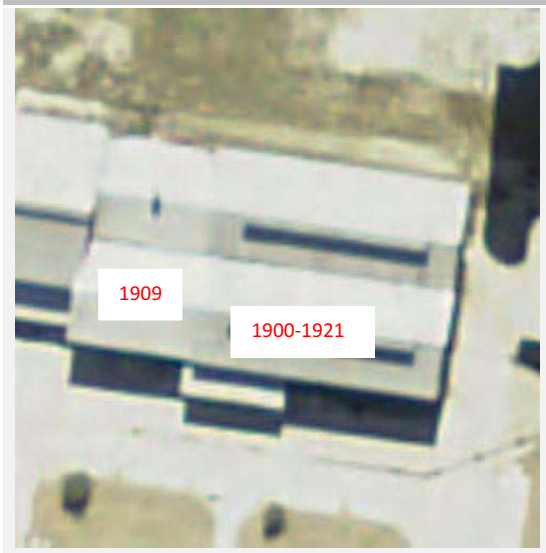
Plate 92: Interior showing Boilermaker's / Blacksmith's Shop.

Plate 93: Interior showing Boilermaker's / Blacksmith's Shop.

Plate 94: Interior showing Boilermaker's / Blacksmith's Shop.

Plate 95: Interior showing Boilermaker's / Blacksmith's Shop.

3.2 Documentary Evidence

Documentary Evidence	
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop**
Building modifications:	 **Plate 96: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
Building timeline:	
1900/03	Machine Shop (Fitting and Repair Shop) constructed with brick, wood and iron, extension with concrete floor
1904/07	1916 Inventory states the extension also included a Cask plant and dispatch office.
1909	New Blacksmiths and Joiner's (or Carpenter's) Shop built.
1920	Machine Shop reconstructed to bring it up to date. The Casking Plant has been boxed and stored, and its space added to the previous repair shop. Gear cutting machine is being added to plant.
1921	Machine Shop considerably extended, and improved; two lathes from England had arrived, and parts for a third. Gear cutting machine does its work very rapidly and most accurately.
Machinery:	
1916	Cask plant installed.
1920	Gear cutting machine installed.
Early plans/photographs:	

Documentary Evidence	
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop**

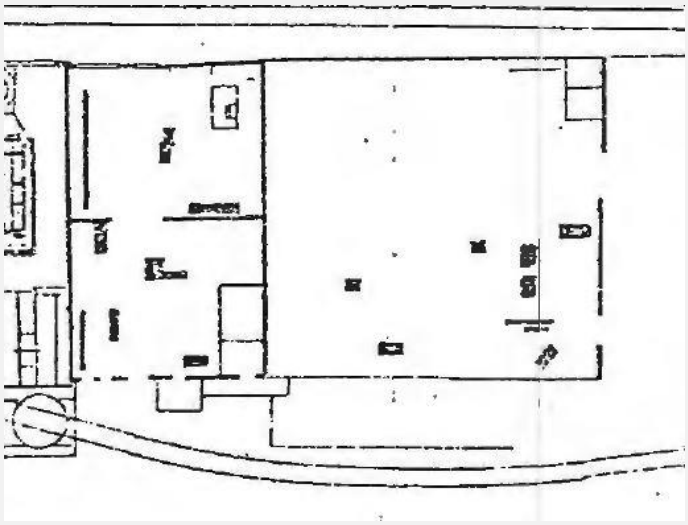


Figure 6: Plan of the Works 1918 (Source: as cited in Fenwick 1993).

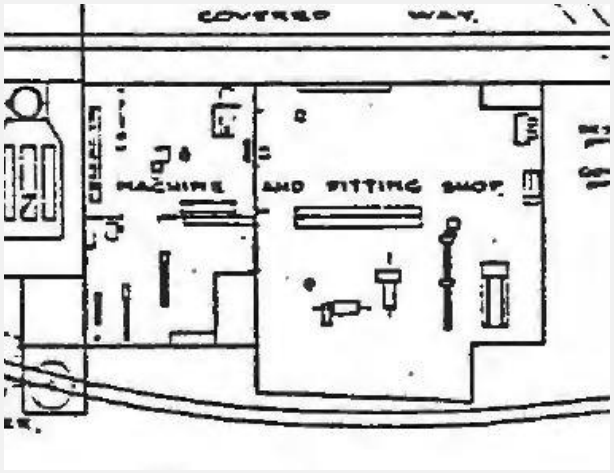


Figure 7: Plan of the Works 1927 (Source: as cited in Fenwick 1993).

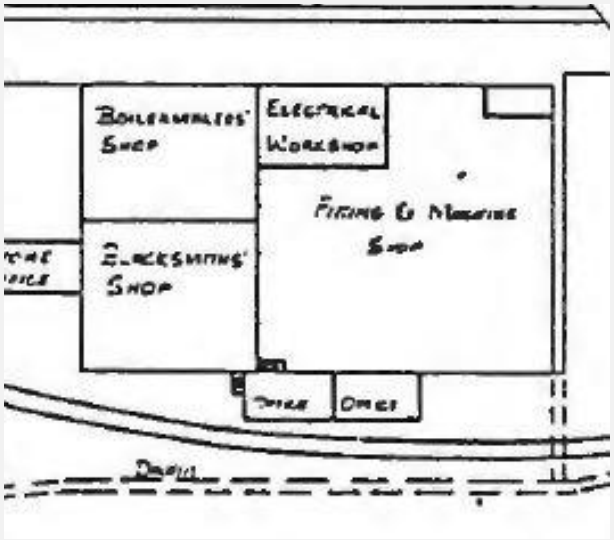


Figure 8: Plan of the Works 1973 (Source: as cited in Fenwick 1993).

Documentary Evidence	
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop**

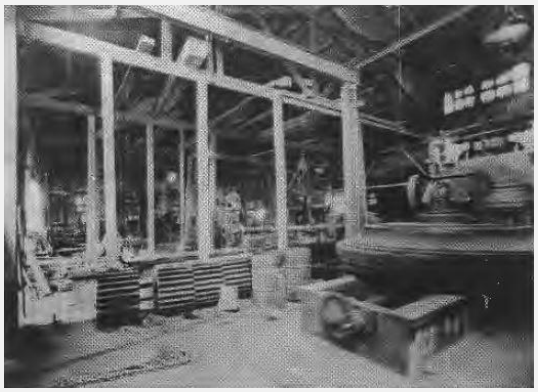


Plate 97: 1927 Fitting and Machine Shop, gear cutting machine on the right (1927 Album C. Finch as cited in Fenwick 1993).

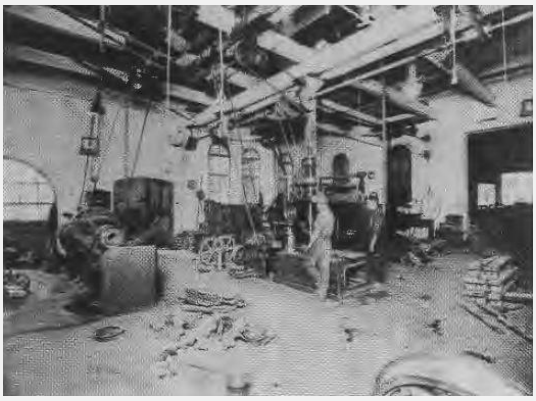


Plate 98: 1927 Fitting and Machine Shop (1927 Album C. Finch as cited in Fenwick 1993).

Plate 99: 1993 Workshop (Source: Fenwick 1993).

3.3 Significance Assessment

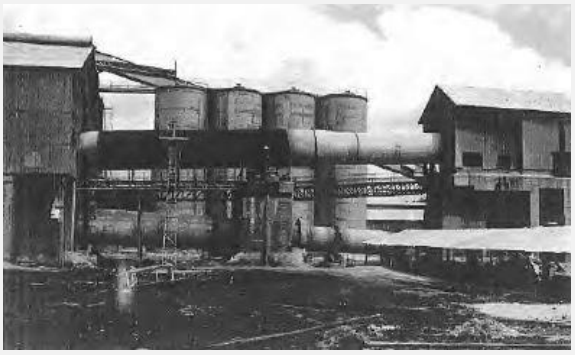
Significance Assessment	
Item No: 3	**Item Name: Boilermaker's / Blacksmith's Shop**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Boilermaker's / Blacksmiths' Shop has direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the primary buildings built for the production of cement.
(b) Associative significance	The Boilermaker's / Blacksmiths' Shop has direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia.
(c) Aesthetic significance	The Boilermaker's / Blacksmiths' Shop is a fine example of Federation Classical industrial and Interwar Functionalist style of building.
(d) Social significance	The Boilermaker's / Blacksmiths' Shop has local social significance for its relationship between The Portland Cement Company and the township.
(e) Research potential	The Boilermaker's / Blacksmiths' Shop has the potential to yield further technological information on the early production of cement.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Boilermaker's / Blacksmiths' Shop is of State significance for its historical relationship with the Second Phase of The Portland Cement Works. The building has a direct association with Dr August Scheidel, the father of modern cement industry in Australia.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

4. Cement Silos

4.1 Condition Assessment

<table>
<tr><th colspan="4">Condition Assessment</th></tr>
<tr><td>Item No: 7</td><td colspan="3">Item Name: Cement Silos (8)</td></tr>
<tr><td></td><td colspan="3"> 
Plate 100: Cement Silos north elevation (Niche 2017).</td></tr>
<tr><td>Description:</td><td colspan="3">Eight cylindrical concrete structures form the Cement Silos and is located north east of the Boilermaker’s / Blacksmiths Shop building. The Silos are constructed on a concrete plinth.</td></tr>
<tr><td rowspan="5">Condition:</td><td colspan="2">Good</td><td>Survey date: 8/9/17</td></tr>
<tr><td colspan="3">Interior: Not accessed.</td></tr>
<tr><td colspan="3">Condition Legend</td></tr>
<tr><td>Good</td><td colspan="2">Structurally sound. Requires little attention</td></tr>
<tr><td>Fair</td><td colspan="2">Structurally sound. Requires minor repair</td></tr>
<tr><td rowspan="5">Integrity:</td><td colspan="3">Poor</td><td>Signs of extensive damage, Requires attention</td></tr>
<tr><td colspan="3">High</td></tr>
<tr><td colspan="3">Integrity Legend</td></tr>
<tr><td>High</td><td colspan="2">Major features contributing to significance are intact</td></tr>
<tr><td>Medium</td><td colspan="2">Retains sufficient features to allow historical interpretation</td></tr>
<tr><td>Low</td><td colspan="2">Major features are altered diminishing the ability for historical interpretation</td></tr>
<tr><td>Significance Grading:</td><td colspan="3">High</td></tr>
<tr><td>Recommendation:</td><td colspan="3">Structural assessment required.
Assess structure for safety of visitors and if required limit access.</td></tr>
</table>

4.2 Documentary Evidence

Documentary Evidence	
Item No: 7	**Item Name: Cement Silos (8)**
Building modifications:	 **Plate 101: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
8 Bin Silos circular concrete, begun in 1961, replacing the original No 1 Silo. Known as the "A" bin silo. Still surviving in 1993 (Fenwick 1993).	
Building timeline:	
1961	Silos constructed
Early plans/photographs:	
 **Plate 102: 1993 Cement Silos (Source: Fenwick 1993).**	 **Plate 103: 1993 Cement Silos (Source: Fenwick 1993).**

4.3 Significance Assessment

Significance Assessment	
Item No: 7	**Item Name: Cement Silos (8)**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Cement Silos has a minor association with the Second Phase of development of the Portland Cement works (1899-1998).
(b) Associative significance	Does not satisfy this criteria.
(c) Aesthetic significance	Does not satisfy this criteria.
(d) Social significance	The Cement Silos is a landmark structure to the town of Portland and has local social significance for its relationship between The Portland Cement Company and the township.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Cement Silos has a minor association with the Second Phase of the development of the Portland Cement works and has landmark qualities significant to the town of Portland.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

5. Weighbridge Office and Weighbridge

5.1 Condition Assessment

<table>
<tr><th colspan="3">Condition Assessment</th></tr>
<tr><td>Item No: 8</td><td colspan="2">Item Name: Weighbridge Office and Weighbridge</td></tr>
<tr><td></td><td colspan="2"> 
Plate 104: Weighbridge Office and Weighbridge south elevation (weighbridge left).</td></tr>
<tr><td>Description:</td><td colspan="2">The Weighbridge Office is a small painted brick building with gable ends to the north and south elevations. The Weighbridge is a timber rail and deck platform located immediately to the west of the Weighbridge Office.</td></tr>
<tr><td rowspan="12">Condition:</td><td>Poor</td><td>Survey date: 8/9/17</td></tr>
<tr><td colspan="2">Exterior</td></tr>
<tr><td>North elevation:</td><td>Paint peeling and minor cracks to brickwork. Steel post corroded.
A covered porch is located on the north elevation and appears to be a later addition.</td></tr>
<tr><td>South elevation:</td><td>Paint peeling and minor cracks to brickwork. Wall vent is an unsympathetic installation.</td></tr>
<tr><td>East elevation:</td><td>Air conditioning unit is an unsympathetic insertion.</td></tr>
<tr><td>West elevation:</td><td>Paint peeling and minor cracks to brickwork.</td></tr>
<tr><td>Roof and roof fittings:</td><td>Generally missing gutters and downpipes. Damage to ridge capping. Damage and rot to timber fascia boards. Corrugated iron roof is in poor condition with missing sheeting and missing fixing nails. Fibre cement sheeting to gable ends appears to be a later addition. Chimney missing a few courses of brickwork on top.</td></tr>
<tr><td>Weighbridge</td><td>Material: Timber and steel.
Condition: Timber is weathered and shows evidence of rot and steel is corroded.
Weighbridge sign: Steel post and metal. Appears original and shows weight.</td></tr>
<tr><td colspan="2">Interior: Not Accessed</td></tr>
<tr><td>Doors:</td><td>Material: Timber panelling.
Door threshold is weathered.</td></tr>
<tr><td>Windows:</td><td>Boarded up and could not be assessed.</td></tr>
<tr><td>Structural assessment:</td><td>Required.</td></tr>
<tr><td colspan="2">Condition Legend</td></tr>
</table>

Condition Assessment		
Item No: 8	**Item Name: Weighbridge Office and Weighbridge**	
	Good	Structurally sound. Requires little attention
	Fair	Structurally sound. Requires minor repair
	Poor	Signs of extensive damage, Requires attention
Integrity:	**Medium**	
	Integrity Legend	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation
Significance Grading:	**Moderate**	
Recommendation:	Implement measures to prevent water ingress to building by replacing missing roof sheeting and repairing gutters and downpipes. Repair missing and broken glazing and timber to doors and windows. Should repainting be proposed for this structure, undertake paint scrapings to identify original walls finish and colour. Structural assessment required.	

Condition Assessment

Item No: 8	Item Name: Weighbridge Office and Weighbridge, Photographs (Niche 2017)

Plate 105: Part west elevation showing original building (left), additions to south façade (centre and right).

Plate 106: Part west elevation showing original building (left) additions (right with lighter brickwork).

Plate 107: Part west elevation looking towards south showing amalgamation of building via infill 1909-1914 (centre).

Plate 108: Part west elevation showing original building with some discolouration on brickwork caused by moss.

5.2 Documentary Evidence

Documentary Evidence	
Item No: 8	**Item Name: Weighbridge Office and Weighbridge**
Building modifications:	 **Plate 109: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
Building timeline:	
1901	Weighbridge Office constructed.
Machinery:	
1901	Weighbridge constructed.

5.3 Significance Assessment

Significance Assessment	
Item No: 8	**Item Name: Weighbridge Office and Weighbridge**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Weighbridge Office and Weighbridge has a direct association with the Second Phase of development of the Portland Cement works (1899-1998).
(b) Associative significance	Does not satisfy this criteria.
(c) Aesthetic significance	The Weighbridge Office and Weighbridge evidences technology that was used in the production of cement.
(d) Social significance	Does not satisfy this criteria.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Weighbridge Office and Weighbridge has a direct association with the Second Phase of the development of the Portland Cement works.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

6. Rail line and alignment

6.1 Condition Assessment

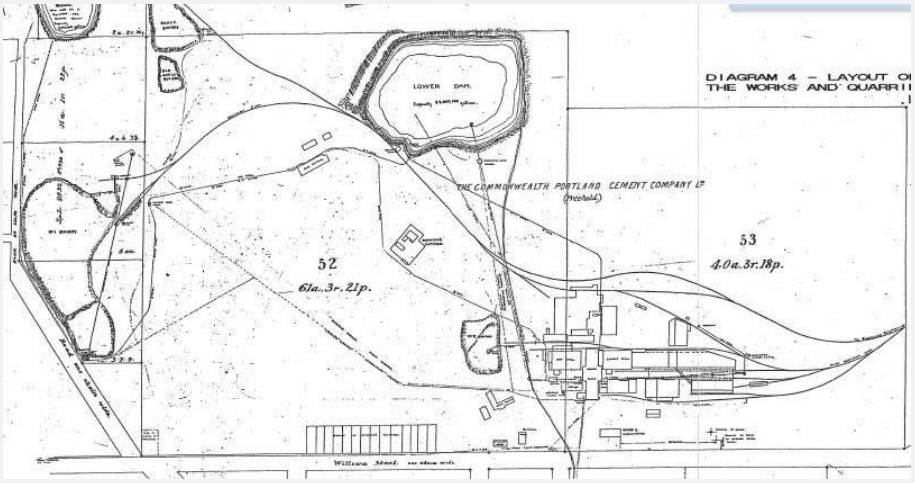
Condition Assessment			
Item No: 9	**Item Name: Rail line and alignment**		
	 **Plate 110: Rail line and alignment view from east looking west.**		
Description:	The remnant Rail line and alignment is located south of the Boilermaker's / Blacksmith building. It extends from the Powerhouse building to east of Boilermaker's / Blacksmith's Shop (towards the demolished Loco Shed). Two alignments have been observed; a two lined steel track and timber and concrete boarded track. There are other alignments present throughout the site which were not included in this assessment.		
Condition:	**Good**		**Survey date**: 8/9/17
	Exterior		
	Steel tracks and metal grates shows some corrosion. Timber boards are weathered.		
	Structural assessment:	Required for timber boards.	
	Condition Legend		
	Good	Structurally sound. Requires little attention	
	Fair	Structurally sound. Requires minor repair	
	Poor	Signs of extensive damage, Requires attention	
Integrity:	**Medium**		
	Integrity Legend		
	High	Major features contributing to significance are intact	
	Medium	Retains sufficient features to allow historical interpretation	
	Low	Major features are altered diminishing the ability for historical interpretation	
Significance Grading:	**Moderate**		
Recommendation:	Use alignments, demolished Loco Shed and preserved Locomotives as part of a future Interpretation Plan for the site. Structural assessment required.		

Condition Assessment	
Item No: 9	**Item Name: Rail line and alignment, Photographs (Niche 2017)**

Plate 111: Rail line detail showing timber boarding and metal grate.

Plate 112: Rail line showing mixture of concrete and timber panels.

6.2 Documentary Evidence

Documentary Evidence	
Item No: 9	**Item Name: Rail line and alignment**
Building modifications:	 **Plate 113: 1910 Plan of Works showing railway lines throughout the site connecting to the town's railway (east) (Source: as cited in Fenwick 1993).**
	Little is written of the early quarrying but from the initial horse and dray transport, a standard gauge rail line was in place by 1902. Broken limestone was moved to the kilns in the immediate vicinity of the quarry or to the cement works crusher via the rail line. *Crushed limestone was transported from the quarry to the works by rail until 1911 when aerial ropeways were installed from the limestone and shale quarries to the works. (Fenwick 1993: 53)* *The Blue Circle Southern Cement Company operated a short private railway to connect their cement plant at Portland the NSWGR line to Mudgee. Although only two kilometers or so in length, the line featured a sharp gradient up to the cement plant. Blue Circle Southern Cement at Portland operated an interesting stud of industrial steam locomotives, often augmented by hired NSWGR locomotives (particularly members of the Z(26) class of 2-6-2ST engines) and was one of the last commercial steam locomotive operations in Australia, with second-hand diesel locomotives taking over as late as 1983. Complete closure of the cement plant followed a few years later.* (http://www.australiansteam.com/Stephenson%202994.htm)
Building timeline:	
1901	A railway line was begun to link the plant and its colliery and to the Portland siding
1901-1927	Extension of lines throughout the site.
Machinery:	
c.1908	The No 2 Locomotive (Stephenson) was shipped from United Kingdom for use at the Portland Cement Works for shunting duties and conveying hopper wagons.
1993/94	No 2 Locomotive restored in 1993/94 and is currently stored at Steam Tram and Railway Preservation (Co-Op) Society Limited, Valley Heights, NSW (Portland Cement Company 1899, Stephenson Locomotive Restoration 1993/94). No.3 Locomotive (Andrew Barclay 1234 of 1911) and No.5 Locomotive (Andrew Barclay 1470 of 1916) are also preserved.

Documentary Evidence	
Item No: 9	**Item Name: Rail line and alignment**

Early plans/photographs:

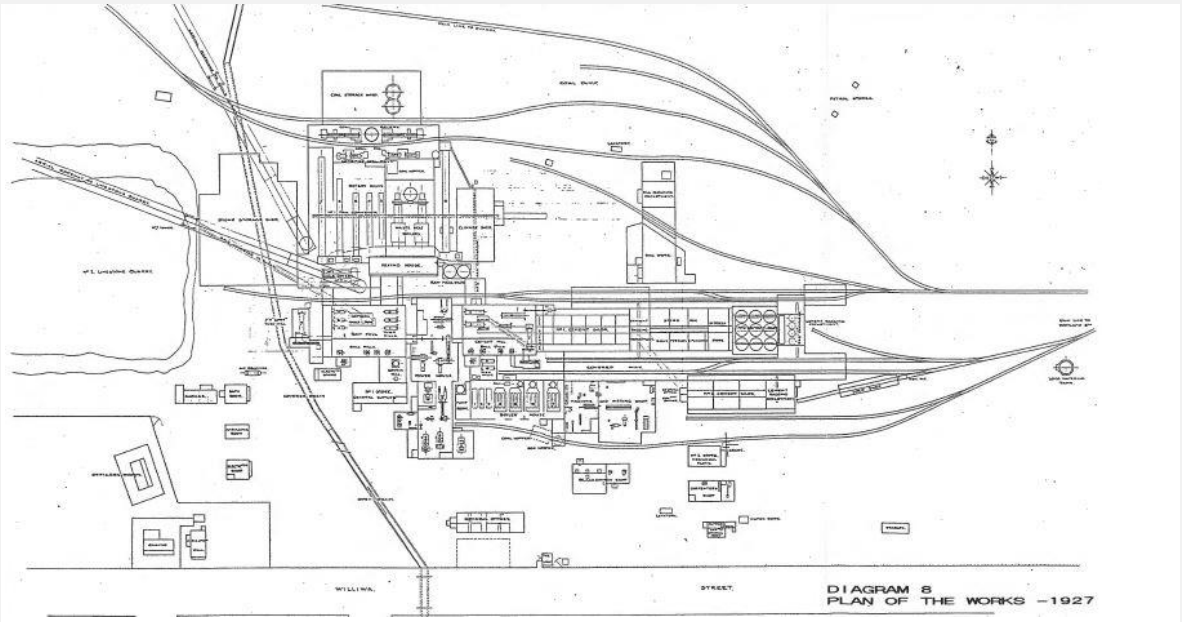


Figure 9: 1927 Plan of works showing railway alignments throughout the site (Source: as cited in Fenwick 1993).

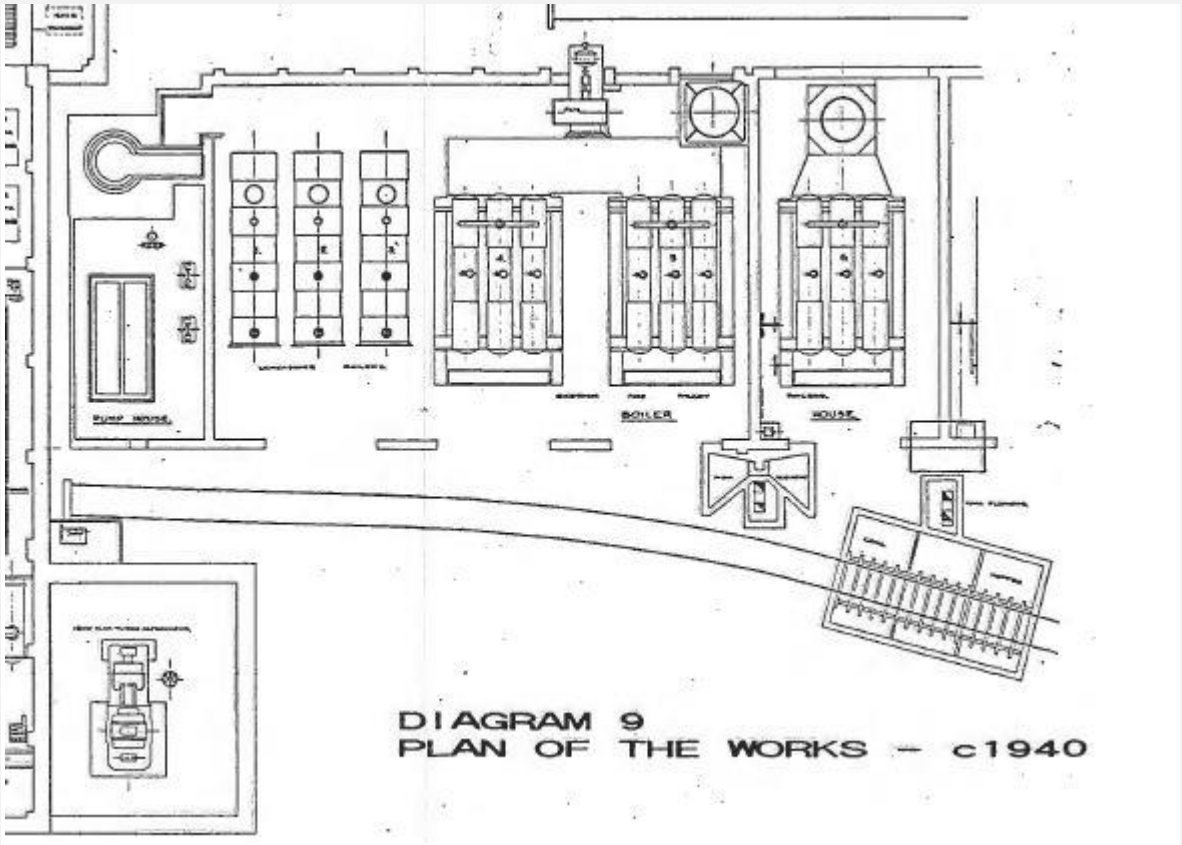


Figure 10: 1940 Plan of works showing detail area in front of Boilerhouse (Source: as cited in Fenwick 1993).

Documentary Evidence	
Item No: 9	**Item Name: Rail line and alignment**

Plate 114: 1974 'Waiting between runs at the Cement factory' (Source: Graham Harvey www.nswrail.net)

Plate 115: 1974 'Waiting between runs at the Cement factory' (Source: Graham Harvey www.nswrail.net)

Plate 116: No. 2 Locomotive 'Stevo' currently stored at Steam Tram and Railway Preservation (Co-Op) Society Limited, Valley Heights (Source: http://www.australiansteam.com/Stephenson%202994.htm)

6.3 Significance Assessment

Significance Assessment	
Item No: 9	**Item Name: Rail line and alignment**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Rail line and alignment has a direct association with the second Phase of development of the Portland Cement works (1899-1998).
(b) Associative significance	The Rail line and alignment has direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia.
(c) Aesthetic significance	The rail line and alignment has technological significance as it evidences the self-sufficient character of The Portland Cement Works.
(d) Social significance	Does not satisfy this criteria.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Rail line and alignment has a direct historical association with the Second Phase of the development of the Portland Cement works. It has associative significance with the works of Dr August Scheidel and has technological significance as it evidences the self-sufficient nature of the Portland Cement Works.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

7. Shower and Bath house

7.1 Condition Assessment

Condition Assessment		
Item No: 10	**Item Name: Shower and Bath house**	
	 **Plate 117: Shower and Bath house north elevation.**	
Description:	The Shower and Bath house is constructed in the Inter war industrial style and is a single storey painted brickwork building with a distinct pattern of brick piers to its elevations. The building has an east west orientation with a gable roof, with corrugated iron sheeting and a clerestory roof above. A room located to the west end appears to be a later addition.	
Condition:	**Good**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Lower area of wall towards east end shows evidence of water ingress.
	South elevation:	Brickwork in good condition with minor cracks. Lower area of wall shows evidence of water ingress.
	East elevation:	Timber rot to external roof truss.
	West elevation:	Broken and damaged brickwork. Unsympathetic brick infills.
	Roof and roof fittings:	Broken gutters and downpipes. Timber rot to barge boards/fascia at gable ends and to clerestory roof.
	Interior	
	Floor:	Material: Painted concrete and linoleum. Poor to fair. Cracked and uneven cement floor in some areas. Presence of rubble and debris.
	Walls:	Material: Painted rendered brickwork Generally in good condition. Shower areas: Tiled finish (appears original) and in good condition. West end room: Face brick wall and windows are a later addition. East end room: Face brick wall is a later addition and is unsympathetic.
	Doors:	Material: Timber and glass panelled door (entry door). Some damage to timber door.
	Windows:	Material: Steel frame awning windows with glass panelling. Timber sash windows to west room. Windows are generally boarded up. Broken and missing glazing. Windows frames in reasonable condition. Highlight windows (Clerestory roof): Broken glazing. Area is poorly ventilated.

Condition Assessment			
Item No: 10	**Item Name: Shower and Bath house**		
	Ceiling/Roof:	Material: Painted FC/timber sheet lined with steel cross beams and exposed steel struts to clerestory roof. Good condition.	
	Fittings:	Bathroom fittings appear to be original and intact.	
	Structural assessment:	May not be required.	
	Condition Legend		
	Good		Structurally sound. Requires little attention
	Fair		Structurally sound. Requires minor repair
	Poor		Signs of extensive damage, Requires attention
Integrity:	**High**		
	Integrity Legend		
	High	Major features contributing to significance are intact	
	Medium	Retains sufficient features to allow historical interpretation	
	Low	Major features are altered diminishing the ability for historical interpretation	
Significance Grading:	**High**		
Recommendation:	Implement measures to prevent water ingress to building. Repair missing and broken glazing and timber to doors and windows. Floors generally require cleaning and removal of rubble. Install general lighting and other services to make rooms habitable. Should repainting be proposed for this structure, undertake paint scrapings to identify original walls finish and colour. A structural assessment had been conducted in 2010 and may require updating.		

Condition Assessment	
Item No: 10	**Item Name: Shower and Bath house, Photographs (Niche 2017)**

Plate 118: Shower and Bath house north elevation.

Plate 119: Shower and Bath house west elevation.

Plate 120: Shower and Bath house east elevation.

Plate 121: Shower and Bath house part north elevation.

Plate 122: Interior showing sheet lining to ceilings, rendered painted brickwork.

Plate 123: Interior showing entry door and awning windows.

Plate 124: Interior entry to shower areas with tiling to walls and internal fixed glazing at high level.

Plate 125: Interior showing typical tiled shower room.

Condition Assessment	
Item No: 10	**Item Name: Shower and Bath house, Photographs (Niche 2017)**

Plate 126: Interior showing room to west end with later addition (right)

Plate 127: Interior showing room to east end with unsympathetic brick infill wall.

Plate 128: Interior showing room to east end with damage to linoleum floor finish.

Plate 129: Interior showing room to east end locker areas.

7.2 Documentary Evidence

Documentary Evidence	
Item No: 10	**Item Name: Shower and Bath house**
Building modifications:	 **Plate 130: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
Bath and Change House built for Lime Plant in 1947 (Fenwick 1993:32)	
Building timeline:	
1947	Bath and Change House built for Lime Plant.

7.3 Significance Assessment

Significance Assessment	
Item No: 10	**Item Name: Shower and Bath house**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Shower and Bath house building has direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the ancillary buildings built for the Lime Plant.
(b) Associative significance	The Shower and Bath house building has associative significance for its relationship with the primary buildings of the Second Phase of development.
(c) Aesthetic significance	The Shower and Bath house building is a fine example of the Inter war industrial style of building.
(d) Social significance	Does not satisfy this criteria.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Shower and Bath house is of State significance for its direct association of the Second Phase of development of the Portland Cement Works as an ancillary building built for the Lime Plant. It has associative value for its relationship with the primary buildings of the Second Phase of development and is a fine Inter war industrial style of building.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

8. Administration Office

8.1 Condition Assessment

Condition Assessment		
Item No: 11	**Item Name: Administration Office**	
	 **Plate 131: Administration Office north elevation.**	
Description:	The Administration Office building is a Federation Classical style building constructed in and east west orientation. The building is single storey with a basement and has both face brick and rendered brickwork. There building has a gable roof with corrugated iron sheeting and two brick chimneys. Arched openings are located on the principal elevations.	
Condition:	**Poor/Fair**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Balustrade to external stairs appears to be modified at a later date.
	South elevation:	Brickwork in good condition with minor cracks.
	East elevation:	Broken and missing brickwork. Presence of paintwork to walls.
	West elevation:	Broken and damaged brickwork. Unsympathetic addition of demountables to west end.
	Roof and roof fittings:	Generally damage to gutters and downpipes. Some downpipes are not original and some are missing. Damage to timber fascia boards. Corrugated iron roof is in poor condition and requires closer inspection and assessment. Weed growing in gutters. Chimney: Broken and missing brickwork.
	Interior	
	Floor:	Material: Concrete/Timber floorboards/Linoleum/Carpet. Poor to fair condition.
	Walls:	Material: Brickwork Generally in poor condition with mould growth, paint peeling and holes on walls. There are unsympathetic additions throughout including timber wall panelling and wall paper finish.
	Doors:	Material: Timber and glass panelled doors (external doors), slate tiles to threshold. Generally timber elements are damaged.
	Windows:	Material: Timber frame and glass panelling. Broken and missing glazing. Windows are generally boarded up. Windows frames in poor condition.

Condition Assessment		
Item No: 11	**Item Name: Administration Office**	
		Unsympathetic addition of air conditioning units and vent fans.
	Ceiling/Roof:	Material: Lath and plaster in intact areas. Poor condition with mould growth, paint peeling and damage to ceilings. There are unsympathetic additions throughout including insertion of ceiling grids.
	Equipment:	There are remnant joinery and laboratory equipment which appear to be original.
	Structural assessment:	Roof and walls need assessment due to water ingress to building.
	Condition Legend	
	Good	Structurally sound. Requires little attention
	Fair	Structurally sound. Requires minor repair
	Poor	Signs of extensive damage, Requires attention
Integrity:	**Medium/Low**	
	Integrity Legend	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation
Significance Grading:	**High**	
Recommendation:	Assess moisture and presence of mould on floors, walls and ceilings and implement measures to prevent water ingress to building. Remove unsympathetic additions such as timber panelled walls, floor finishes and ceilings grids. Repair missing and broken glazing and timber to doors and windows. Install general lighting and other services to make rooms habitable. Should repainting be proposed for this item, undertake paint scrapings to identify original walls finish and colour. Use joinery and laboratory equipment as part of a future Interpretation Plan for the building. Generally the exterior is in a fair condition whilst the interior is poor and requires urgent repairs and conservation works. Structural assessment required.	

Condition Assessment	
Item No: 11	**Item Name: Administration Office, Photographs (Niche 2017)**

Plate 132: Administration Office north elevation.

Plate 133: Administration Office south elevation.

Plate 134: Administration Office west elevation.

Plate 135: Administration Office east elevation.

Plate 136: Interior showing timber stair at south entrance and unsympathetic timber panelled wall addition (background).

Plate 137: Interior showing ceiling at south entrance and missing ceiling, unsympathetic wall finish.

Condition Assessment	
Item No: 11	**Item Name: Administration Office, Photographs (Niche 2017)**

Plate 138: Interior showing intact room with original timber and glass partitions.

Plate 139: Interior showing intact room with original timber and glass partitions.

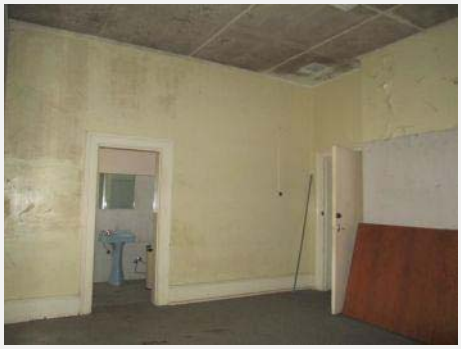


Plate 140: Interior mould on ceilings.

Plate 141: Interior showing paint peeling on walls, unsympathetic air conditioning unit addition.

Plate 142: Interior showing lath and plaster ceiling.

Plate 143: Interior showing damage to walls.

Plate 144: Interior showing missing ceiling, unsympathetic wall finish including timber panelling.

Plate 145: Interior showing kitchen area with timber joinery and linoleum flooring.

Condition Assessment	
Item No: 11	**Item Name: Administration Office, Photographs (Niche 2017)**

Plate 146: Interior showing secondary access stair with unsympathetic infill to balustrade, altered floor finish to steps and landing (timber sheet and modern tiles).

Plate 147: Interior showing damage to walls and stripped floor finish. Unsympathetic addition beyond (carpet finish).

Plate 148: Interior showing unsympathetic additions, timber panelled walls, ceiling grid and electrical services. Note: Evidence of mould on walls.

Plate 149: Interior showing unsympathetic additions; wall finish and ceiling grid. Note: Evidence of mould on walls.

Plate 150: Interior showing timber joinery. This appears to be a prayer room.

Plate 151: Interior showing room at basement level, awning style windows, timber joinery and old equipment.

Condition Assessment	
Item No: 11	**Item Name: Administration Office, Photographs (Niche 2017)**

Plate 152: Interior to basement showing unsympathetic wall finish (timber panelling, right) and brick infill and damage to walls.

Plate 153: Interior to basement level under stairway showing timber panelling to stair and evidence of mould on walls.

Plate 154: Interior to basement level showing concrete floor and original timber panelled ceiling.

Plate 155: Signage to north entrance appears original and may have interpretive value.

8.2 Documentary Evidence

Documentary Evidence	
Item No: 11	**Item Name: Administration Office**
Building modifications:	 **Plate 156: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
Building timeline:	
1901	Administration building constructed. Also known as Works Office/Laboratory Building.
1924	Extensions to the building made including internal modifications to suit staff management changes.
c.1960s?	Building alterations made particularly to the interior.
Equipment:	
1901	Laboratory equipment installed.
1912	A Quirks Gas Plant for the lab was built of wood and iron.
Early plans/photographs:	

Documentary Evidence	
Item No: 11	**Item Name: Administration Office**

Figure 11: 1902 Plan of Works showing offices (Source: as cited in Fenwick 1993).

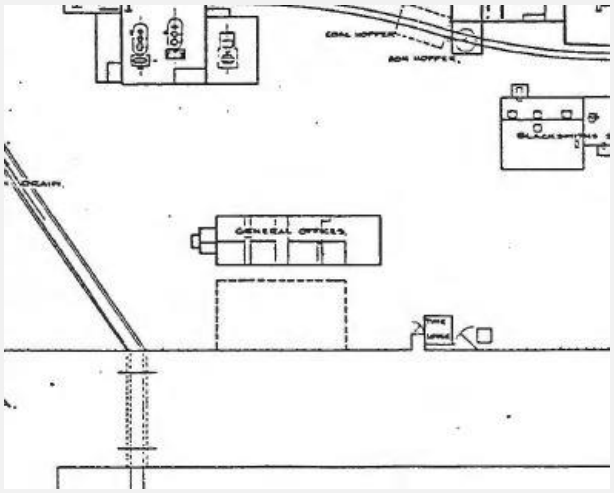


Figure 12: Plan of the Works 1940 (Source: as cited in Fenwick 1993).

Figure 13: 1927 Administration Building looking south west (Source: 1927 Album C. Pinch as cited in Fenwick 1993).

8.3 Significance Assessment

Significance Assessment	
Item No: 11	**Item Name: Administration Office**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Administration Office building has direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the primary buildings built for the administration works associated with the production of cement.
(b) Associative significance	The Administration Office building has direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia.
(c) Aesthetic significance	The Administration Office building is a fine example of the Federation Classical style of building. The laboratory function of the building evidences the technological advances made in the cement production industry within Australia.
(d) Social significance	Does not satisfy this criteria.
(e) Research potential	The Administration Office building has the potential to yield further technological information on the early production of cement.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	The Administration Office building is representative of the administration precinct of the Second Phase of development of the Portland Cement Works.
Previous Assessments:	*While the (former) Portland Cement Works Site is of local significance as 'the heart of Portland', it is of State significance for begetting 'the town that built NSW'. The Processing and Administrative area retains significant built fabric, including the Federation era Powerhouse and Boiler House chimney that are recognised landmarks for the community and district. (Nomination for SHR Listing)*
Summary statement of significance:	The Administration Office building is of State significance for its historical relationship with the Second Phase of The Portland Cement Works. The building has a direct association with Dr August Scheidel, the father of modern cement industry in Australia and is a fine example of a Federation Classical building. It also represents the technological advances made during the early foundations of the Cement producing industry within Australia.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

9. Williwa Street Cottage Group

9.1 Condition Assessment

Condition Assessment		
Item No: 12	**Item Name: Williwa Street Cottage Group**	
	 **Plate 157: Williwa Street Cottage Group south from Williwa Street.**	
Description:	The Williwa Street Cottage group consists of Federation style cottages. The cottages are generally constructed of brickwork and corrugated iron roofs. Cottages 1 & 2 (Former Post Office), Cottages 5 & 6, Cottages 7 & 8, Cottages 9 &10, Cottages 11 & 12 and Cottages 13 & 14. Note: Cottages 3 & 4 (Former Bachelors Quarters) – Demolished	
Condition:	**Poor**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Some broken and missing brickwork. Circular window has been moved. Presence of fire retardant spray.
	South elevation:	Brickwork in good condition with minor cracks.
	East elevation:	Broken and missing brickwork. Presence of paintwork to walls.
	Cottages 1 & 2	Walls: Missing mortar to brickwork and cracks to walls. Evidence of water ingress. Unsympathetic brick additions to rear. Roof: Timber roof trims rotted and damaged. Broken gutters and downpipes. Broken and missing roof panels. Lean to: Corrugated iron walls. Missing and damaged walls. Chimney: Damage to brickwork. Verandah: Timber balusters and posts rotted and damaged. Unsympathetic concrete blocks. Windows/Doors: Boarded.
	Cottages 5 & 6	Walls: Missing mortar to brickwork and cracks to walls. Evidence of water ingress. Roof: Timber roof trims rotted and damaged. Broken gutters and downpipes. Broken and missing roof panels. Lean to: Corrugated iron walls. Missing and damaged walls. Chimney: Damage to brickwork and some missing chimneys. Verandah: Timber posts rotted, damaged and some are missing. Windows/Doors: Boarded.

Condition Assessment		
Item No: 12	**Item Name: Williwa Street Cottage Group**	
	Cottages 7 & 8	Walls: Missing mortar to brickwork and cracks to walls. Evidence of water ingress. Roof: Timber roof trims rotted and damaged. Broken gutters and downpipes. Broken and missing roof panels. Chimney: Damage to brickwork and some missing chimneys. Verandah: Balustrade missing balusters. Timber balusters and posts rotted and damaged. Windows/Doors: Boarded.
	Cottages 9 & 10	Walls: Missing mortar to brickwork and cracks to walls. Evidence of water ingress. Unsympathetic brick additions to rear. Roof: Timber roof trims rotted and damaged. Broken gutters and downpipes. Broken and missing roof panels. Lean to: Corrugated iron walls. Missing and damaged walls. Chimney: Damage to brickwork and some missing chimneys. Verandah: Balustrade missing balusters. Timber balusters and posts rotted and damaged. Windows/Doors: Boarded.
	Cottages 11 & 12	Walls: Missing mortar to brickwork and cracks to walls. Unsympathetic brick additions to rear. Roof: Timber roof trims rotted and damaged. Broken gutters and downpipes. Broken and missing roof panels. Lean to: Corrugated iron walls. Missing and damaged walls. Chimney: Damage to brickwork and some missing chimneys. Verandah: Balustrade missing balusters. Windows/Doors: Boarded.
	Cottages 13 & 14	Walls: Missing mortar to brickwork and cracks to walls. Some walls covered in vines. Evidence of water ingress. Unsympathetic brick additions to rear. Roof: Timber roof trims rotted and damaged. Broken gutters and downpipes. Broken and missing roof panels. Lean to: Corrugated iron walls. Missing and damaged walls. Chimney: Damage to brickwork and some missing chimneys. Verandah: Balustrade missing balusters. Timber balusters and posts rotted and damaged. Windows/Doors: Boarded.
	Interior: Not accessed.	
	Condition Legend	
	Good	Structurally sound. Requires little attention
	Fair	Structurally sound. Requires minor repair
	Poor	Signs of extensive damage, Requires attention
Integrity:	**Medium**	
	Integrity Legend	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation

Condition Assessment	
Item No: 12	**Item Name: Williwa Street Cottage Group**
Significance Grading:	**High**
Recommendation:	Generally the cottages are in poor condition needing urgent repair and conservation. Implement measures to prevent water ingress to buildings. Repair and replace roof sheeting and rainwater goods as required. Remove unsympathetic additions. Repair any missing and broken glazing and timber frames to doors and windows. Repair and reinstate missing details e.g. to verandahs. Should repainting be proposed, undertake paint scrapings to identify original walls finish and colour. Structural assessment required.

Condition Assessment	
Item No: 12	**Item Name: Williwa Street Cottage Group**

Plate 158: Cottages 1 & 2 south elevation.

Plate 159: Part west elevation showing original building (left) additions (right with lighter brickwork).

Plate 160: Cottages 5 & 6 south elevation.

Plate 161: Cottages 5 & 6 north elevation.

Plate 162: Cottages 7 & 8 south elevation.

Plate 163: Cottages 7 & 8 north elevation.

Plate 164: Cottages 9 & 10 south elevation.

Plate 165: Cottages 9 & 10 east elevation.

Condition Assessment	
Item No: 12	**Item Name: Williwa Street Cottage Group**

Plate 166: Cottages 11 & 12 south elevation.

Plate 167: Cottages 11 & 12 north elevation.

Plate 168: Cottages 13 & 14 south elevation.

Plate 169: Cottages 13 & 14 north elevation.

Plate 170: Area north of Cottages showing outbuildings.

Plate 171: Area north of Cottages showing outbuildings.

Plate 172: View of rear of Cottages looking east showing outbuildings.

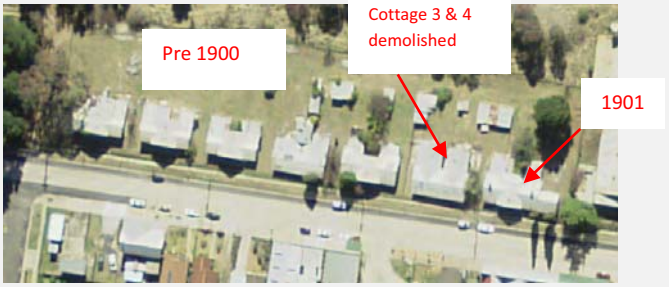
Plate 173: Area north of Cottages showing remnant outbuildings.

Condition Assessment	
Item No: 12	**Item Name: Williwa Street Cottage Group**

Plate 174: Eastern view adjacent Cottage 1 & 2 showing mature tree.

Plate 175: Area north of Cottages adjacent Annex building showing mature tree.

9.2 Documentary Evidence

Documentary Evidence	
Item No: 12	**Item Name: Williwa Street Cottage Group**
Building modifications:	 **Plate 176: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
Dr Scheidel wrote in his letter dated January 24th 1901 that when the site was purchased by the Commonwealth Portland Cement Company there were already cottages on the site. He stated 'the houses acquired with the old works and leases need to be put into habitable conditions.' (CMP NBRS 2010:30)	
Building timeline:	
c1890	First set of workers' accommodation built along Williwa Road, being the old Bachelors' Quarters (No. 3 & 4 Williwa Street) and No. 7 & 8 Williwa Street. They are built during the Cullen Bullen Lime and Cement Company operations, as simple three-room single-storey terrace cottages. The Bachelors' Quarters are constructed as four three-room apartments with shared amenities at the rear.
1900	Correspondence from Dr Scheidel evidence that Cottages existed when the site was purchased by the Commonwealth Portland Cement Company in 1901.
1900-1901	Post Office building is constructed. Originally built to accommodate staff, the building is offered to the Postal Department in 1902 as the district Post Office, a role it plays until 1912.
1900-1902	Four semi-detached single-storey cottages are built along Williwa Street (5 & 6, 9 & 10, 11 & 12, 13 & 14 Williwa Street). Each is built as four room dwellings; two bedrooms, a living room and a kitchen.
1912	A new Post Office building is constructed in Portland. The old Post Office in Williwa Street is converted for use by the Bank of New South Wales, with the attached dwelling becoming the bank manager's residence. The Bank remained in the building until 1964.
c1920	Alterations to the old Bachelors' Quarters includes the addition of a laundry and bathroom at the rear of each apartment.
c1930s	Old Bachelors' Quarters is opened up to form two x two bedroom apartments.
1964	The Bank of NSW relocates to a new bank building in Portland and the former Post Office building is converted back to accommodation for the cement works.
1992	The cottages begin to be vacated as the cement works begin to close. All cottages are currently empty.
Early plans/photographs:	

Documentary Evidence	
Item No: 12	**Item Name: Williwa Street Cottage Group**

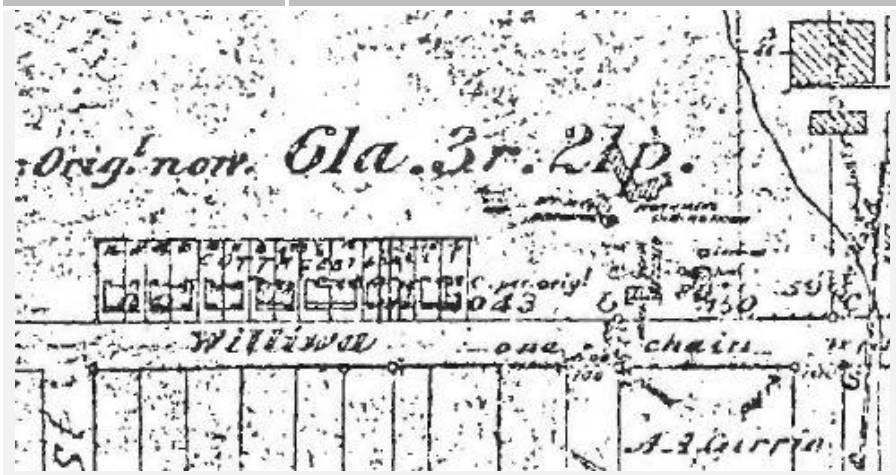


Figure 14: 1902 Plan of works showing all of cottages constructed including Casino building. (Source: as cited in Fenwick 1993)

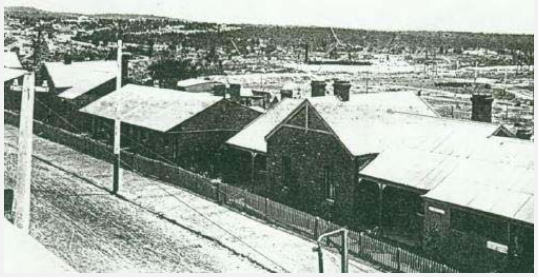


Plate 177: 1912 View of Cottages (Source: Blue Circle Maldon Archives, as cited in CMP NBRS 2010).

Plate 178: View of Cottages 1 & 2 (Source: Blue Circle Maldon Archives, as cited in CMP NBRS 2010).

Plate 179: 1914 View of southern side of Williwa Street (Source: Blue Circle Maldon Archives as cited in NBRS 2010)

9.3 Significance Assessment

Significance Assessment	
Item No: 12	**Item Name: Williwa Street Cottage Group**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Williwa Street Cottage Group has a direct association with the pioneers of Portland Cement production, George Raffan and John Raffan in the First Phase (1882-1899) of the site.
(b) Associative significance	The Williwa Street Cottage Group has a direct association with George and John Raffan, the early pioneers of Portland Cement in NSW.
(c) Aesthetic significance	The Williwa Street Cottage Group, although in poor condition, are fine examples of Federation style cottages.
(d) Social significance	The Williwa Street Cottage Group has local social significance for its relationship between The Portland Cement Company and the residents/workers of the township.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	The Williwa Street Cottage Group collectively represent the social stratification of the company town. It is also representative as a group of fine Federation style worker's cottages.
Previous Assessments:	*The Williwa Street cottages are of State significance as representative Federation era cottages that help demonstrate the social stratification of the company town* (SHR listing).
Summary statement of significance:	The Williwa Street Cottage Group is of State significance for its historical relationship with the First Phase of The Portland Cement Works. The Cottages have a direct association with the pioneers of Portland Cement production, George Raffan and John Raffan in the First Phase (1882-1899) of the site. The cottages represent a fine example of a group of Federation style worker's cottages.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

10.Workshop (Small store)

10.1 Condition Assessment

Condition Assessment			
Item No: 13	**Item Name: Workshop (Small store)**		
	 **Plate 180: Workshop south elevation.**		
Description:	The Workshop building is a painted brick structure aligned in an east west orientation. It is single storey and has a gable and clerestory roof clad in corrugated iron sheeting. A prefabricated metal shed is attached to the western elevation.		
Condition:	**Poor**		**Survey date**: 8/9/17
	Exterior		
	North elevation:	Cracks in brickwork. Store room is an unsympathetic later addition.	
	South elevation:	Shows evidence of water ingress at lower part of walls.	
	East elevation:	Minor damage to brickwork and finish.	
	West elevation:	Metal shed is an unsympathetic addition.	
	Roof and roof fittings:	Generally gutters and downpipes corroded and broken. Damage to timber fascia boards. Corrugated iron roof is in poor condition and requires closer inspection and assessment. Chimney missing rows of brickwork. Clerestory roof has infilled FC walls. Evidence of bowing to roof ridge.	
	Interior: Not accessed except for Store room (north)		
	Doors:	Material: Generally boarded. Some of the doors evidence of timber rot and damage.	
	Windows:	Material: Generally boarded. Damage to timber sills.	
	Structural assessment:	Required especially to roof.	
	Condition Legend		
	Good	Structurally sound. Requires little attention	
	Fair	Structurally sound. Requires minor repair	
	Poor	Signs of extensive damage, Requires attention	
Integrity:	**Medium**		
	Integrity Legend		

Condition Assessment		
Item No: 13	**Item Name: Workshop (Small store)**	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation
Significance Grading:	**High**	
Recommendation:	Assess moisture on walls and floors and implement measures to prevent water ingress to building. Remove unsympathetic structures. Repair missing and broken glazing and timber to doors and windows. Should repainting be proposed for this structure, undertake paint scrapings to identify original walls finish and colour. Investigate infill FC walls at clerestory level to determine if there is evidence of window openings. Structural assessment required.	

Condition Assessment

Item No: 13	Item Name: Workshop (Small store), Photographs (Niche 2017)

Plate 181: Part north elevation showing Store room (appears to be a later addition).

Plate 182: Part north elevation showing metal shed to the west.

Plate 183: Part north elevation.

Plate 184: Part west elevation.

Plate 185: Part south elevation.

Plate 186: Part south elevation showing water ingress.

Plate 187: Part south elevation.

Plate 188: Interior of Store room showing later addition.

10.2 Documentary Evidence

Documentary Evidence	
Item No: 13	**Item Name: Workshop (Small store)**
Building modifications:	 **Plate 189: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
Building timeline:	
c.1910-1914	Workshop (Small store) built, originally known as the Dining Room (also known as the Electrician's Store).
Early plans/photographs:	
 **Plate 190: 1904 Workshop is unbuilt (area north of Casino occupied by a smaller structure) (Source: Promotional Booklet BCSC Head Office Library as cited in Fenwick 1993).**	

Documentary Evidence	
Item No: 13	**Item Name: Workshop (Small store)**

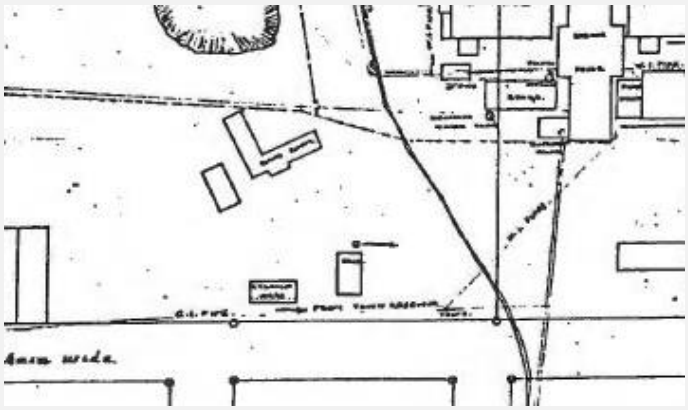


Figure 15: 1910 Plan of works showing Workshop not constructed (Source: as cited in Fenwick 1993).

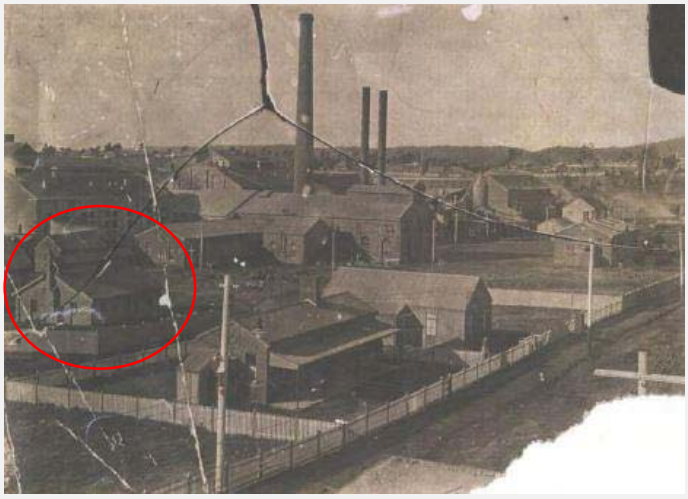


Plate 191: 1914 image showing Workshop building to the north of Casino building. (Source: Blue Circle Maldon Archives as cited in NBRS 2010).

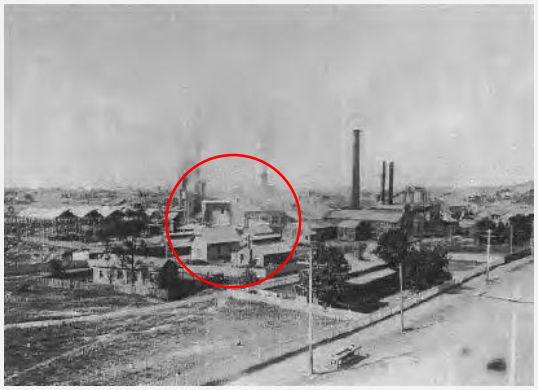


Plate 192: 1927 image (Source: 1927 Album C. Pinch as cited in Fenwick 1993).

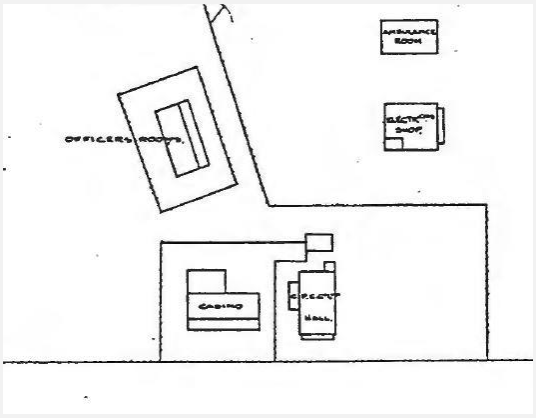


Figure 16: 1927 Plan showing Workshop constructed (1927 Plan of Works as cited in Fenwick 1993).

10.3 Significance Assessment

Significance Assessment	
Item No: 13	**Item Name: Workshop (Small store)**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Workshop (Small store) building has direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the ancillary buildings built for the production of cement.
(b) Associative significance	The Workshop (Small store) has direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia.
(c) Aesthetic significance	Does not satisfy this criteria.
(d) Social significance	Does not satisfy this criteria.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Workshop (Small store) building is of State significance for its historical relationship with the Second Phase of The Portland Cement Works and has a direct association with Dr August Scheidel, the father of modern cement industry in Australia.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

11.Annex (Small Arms Factory)

11.1 Condition Assessment

Condition Assessment		
Item No: 14	**Item Name: Annex (Small Arms Factory)**	
	 **Plate 193: Annex south elevation.**	
Description:	The Annex is constructed on a masonry base with timber clad walls above. The roof is gabled with corrugated iron roof sheeting. The building is oriented in a north south direction and includes secondary rooms to the east and north east corners. A mixture of timber framed double hung and glass louvre windows are located in each elevation. The roof includes a number of vent shafts.	
Condition:	**Poor**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Generally all external timber cladding evidence weathering and rot. Elevated water tank on steel braced structure.
	South elevation:	External walls form a parapet roof and high level windows are located on the gable roof beyond.
	East elevation:	Brick structure to the north east corner and garage to the east.
	West elevation:	Some openings have been infilled with corrugated iron sheeting.
	Roof and roof fittings:	Generally gutters and downpipes corroded, broken and some missing. Weeds growing on gutters. Roof sheeting is in poor condition.
	Interior: Partially inspected due to limited safe access	
	Floor:	Material: Timber floor boards. Large areas showing evidence of water damage and rot to timber.
	Ceiling/roof:	Material: Open steel truss/fibre cement Areas showing evidence of water damage.
	Doors:	Material: Timber multi-paned. Roller door to north elevation. Damaged and broken timber panels.
	Windows:	Material: Timber framed, single paned and glass louvres Broken and missing glazing.
	Structural assessment:	Required for floors, walls and roof.
	Condition Legend	

Condition Assessment		
Item No: 14	**Item Name: Annex (Small Arms Factory)**	
	Good	Structurally sound. Requires little attention
	Fair	Structurally sound. Requires minor repair
	Poor	Signs of extensive damage, Requires attention
Integrity:	**High**	
	We recommend that this structure be demolished. We see this being a potential fire hazard. We see the building's close proximity to an operating child care facility and the site boundary as being unsafe. We consider this structure to be beyond reasonable repair and that securing is does not eliminate the fire threat. There high level water storage tank to the north west of the structure should also be demolished due to the safety is currently poses (URS 2002). *The building is in poor condition with evidence of water penetration, contamination and structural failure* (NBRS 2010).	
	Integrity Legend	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation
Significance Grading:	**Moderate/Little**	
Recommendation:	Assess weathering and rot to walls and floors and implement measures to prevent water ingress to building. Repair missing and broken glazing and timber to doors and windows. If repainting is proposed for this structure, undertake paint scrapings to identify original wall finish and colour. The URS 2002 report and the NBRS 2010 report have both recommended that the Annex should be demolished due to its poor condition and structural failure. An updated structural assessment is required. Measures of building repair and adaptation should be exhausted prior to any proposal to demolish this structure.	

Condition Assessment

Item No: 14	Item Name: Annex (Small Arms Factory), Photographs (Niche 2017)

Plate 194: North elevation.

Plate 195: Part east elevation showing garage to the left.

Plate 196: Part east elevation showing masonry structure to the right.

Plate 197: Part west elevation.

Plate 198: Part west elevation.

Plate 199: Detail area of east elevation showing brick plinths and gantry.

Plate 200: Interior showing water damage to floors and ceilings.

Plate 201: Interior showing water damage to ceilings.

Condition Assessment	
Item No: 14	**Item Name: Annex (Small Arms Factory), Photographs (Niche 2017)**

Plate 202: Interior of main room showing water damage to floor boards.

Plate 203: Interior of main room showing water damage to floor boards.

11.2 Documentary Evidence

Documentary Evidence	
Item No: 14	**Item Name: Annex (Small Arms Factory)**
Building modifications:	 **Plate 204: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
Building timeline:	
1939	Commonwealth Government resumes a small block of land in Portion 52 fronting Williwa St to build a 'Munitions Annex' for workers in the production of munitions (SHR listing).
1943	Land adjoining the Casino is taken up by the Commonwealth Government for construction of a fire arms annex connected to the Small Arms Factory in Lithgow. The annex is one of ten buildings in the district constructed to supply rifle and machine gun components to the Lithgow factory (SHR listing).
1974	Portland Cement buys back the former small arms annex building and uses it for on-site storage.

11.3 Significance Assessment

Significance Assessment	
Item No: 14	**Item Name: Annex (Small Arms Factory)**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Annex building has some historical significance for its association with the WWII events within the local area. However, it has only incidental association with the Portland Cement Works.
(b) Associative significance	Does not satisfy this criteria.
(c) Aesthetic significance	Does not satisfy this criteria.
(d) Social significance	Does not satisfy this criteria.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Annex (Small store) building has little or no significance as it does not evidence the key phases of the Portland Cement Site.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

12. Ambulance Station

12.1 Condition Assessment

Condition Assessment		
Item No: 14	**Item Name: Ambulance Station**	
	 **Plate 205: Ambulance station east elevation.**	
Description:	The Ambulance Station is a single storey, painted masonry building with a Dutch-hipped roof. The building is oriented in an east-west direction and includes timber framed sash windows and a corrugated iron roof. A large timber double leafed door, two circular features (most likely clocks) and louvered opening mark the principal elevation. The brickwork/stone in a stretcher bond pattern.	
Condition:	**Fair**	**Survey date**: 8/9/17
	Exterior	
	North elevation:	Generally all external walls have some cracks. Broken and damaged wall finish to lower courses.
	South elevation:	Broken and damaged wall finish to lower courses.
	East elevation:	Brick structure to the north east corner and garage to the east.
	West elevation:	Vent holes located to lower part of walls.
	Roof and roof fittings:	Generally gutters and downpipes corroded, broken and some missing. Weeds growing on gutters. Roof sheeting is in poor condition.
	Interior: Partially inspected due to limited safe access	
	Floor:	Material: Cement. Minor cracks and unevenness to floor.
	Ceiling/roof:	Material: Exposed beams and sheet lined ceiling. Peeling paintwork and some evidence of water damage.
	Doors:	Material: Timber (east), Missing door (west). East door is damaged.
	Windows:	Material: Timber framed, glazed panels with architraves. Cross bracing window to east. Broken and missing glazing. Internal steel bars.
	Equipment:	Oil pump on internal west wall.
	Structural assessment:	Required for walls and roof.

Condition Assessment		
Item No: 14	**Item Name: Ambulance Station**	
	Condition Legend	
	Good	Structurally sound. Requires little attention
	Fair	Structurally sound. Requires minor repair
	Poor	Signs of extensive damage, Requires attention
Integrity:	**High**	
	Integrity Legend	
	High	Major features contributing to significance are intact
	Medium	Retains sufficient features to allow historical interpretation
	Low	Major features are altered diminishing the ability for historical interpretation
Significance Grading:	**High**	
Recommendation:	Implement measures to prevent water ingress to building. Repair missing and broken glazing and timber to doors and windows. Should repainting of the structure be proposed, undertake paint scrapings to identify original walls finish and colour. Use equipment as part of a future Interpretation Plan for the building. Structural assessment required.	

Condition Assessment

Item No: 15	Item Name: Ambulance Station, Photographs (Niche 2017)

Plate 206: North elevation.

Plate 207: West elevation.

Plate 208: South elevation.

Plate 209: Detail at north west corner of roof showing damage to gutters and timber roof trims.

Plate 210: Interior looking west.

Plate 211: Interior looking east.

12.2 Documentary Evidence

Documentary Evidence	
Item No: 14	**Item Name: Annex (Small Arms Factory)**
Building modifications:	 **Plate 212: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
1912/13 built, west of the Power House. A small building, in a group with the Bathroom and the Electrical Repair shop, two of these buildings remain in 1993 (Fenwick 1993).	
Building timeline:	
1912/1913	Ambulance Store built.
1993	Building used as in Oil Store
Early plans/photographs:	

Documentary Evidence	
Item No: 14	**Item Name: Annex (Small Arms Factory)**

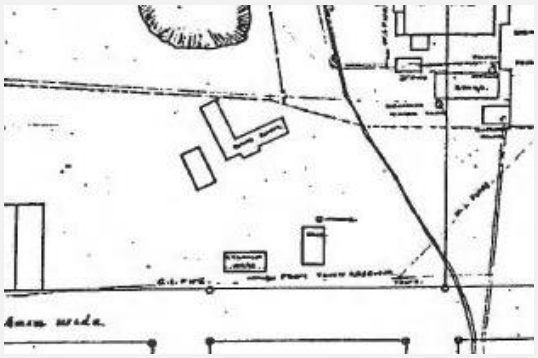


Figure 17: 1910 Plan of works showing Ambulance Station unbuilt (Source: as cited in Fenwick 1993).

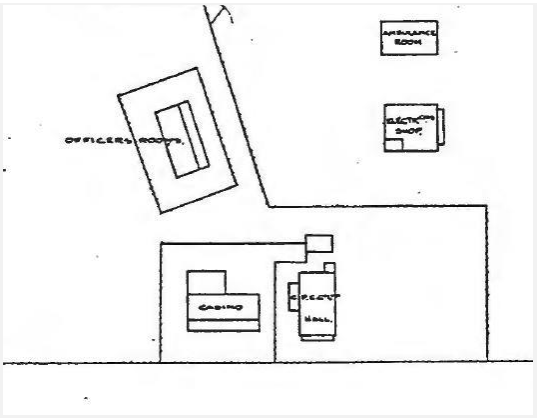


Figure 18: 1927 Plan of works showing Ambulance Station built (Source: as cited in Fenwick 1993).

Plate 213: 1993 image of Ambulance Store and Oil tank to right.

12.3 Significance Assessment

Significance Assessment	
Item No: 13	**Item Name: Workshop (Small store)**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Ambulance Store building has a direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the ancillary buildings built for the production of cement.
(b) Associative significance	The Ambulance Store building has direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia.
(c) Aesthetic significance	The Ambulance Store building has technological significance as it evidences the self-sufficient character of The Portland Cement Works.
(d) Social significance	Does not satisfy this criteria.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	-
Summary statement of significance:	The Ambulance Store building is of State significance for its historical relationship with the Second Phase of The Portland Cement Works. It has a direct association with Dr August Scheidel, the father of modern cement industry in Australia and evidences the self-sufficient character of The Portland Cement Works.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

13. Casino (Officer's Mess)

13.1 Condition Assessment

Condition Assessment			
16	**Item Name: Casino (Officer's Mess)**		
	 **Plate 214: Casino south east view from Williwa Street.**		
Description:	The Casino (Officer's Mess) building is a single storey gable roofed structure with a verandah to its principal elevation to Williwa Street. Arched double hung windows, corrugated iron roof and brick chimney are prominent features of the building.		
Condition:	**Good**		**Survey date**: 8/9/17
	Exterior		
	Casino	The building has been recently refurbished and appears to be generally in good condition.	
	Interior: Not accessed.		
	Condition Legend		
	Good	Structurally sound. Requires little attention	
	Fair	Structurally sound. Requires minor repair	
	Poor	Signs of extensive damage, Requires attention	
Integrity:	**High**		
	Integrity Legend		
	High	Major features contributing to significance are intact	
	Medium	Retains sufficient features to allow historical interpretation	
	Low	Major features are altered diminishing the ability for historical interpretation	
Significance Grading:	**High**		
Recommendation:	The Casino building is in good condition. Internal inspection should be undertaken for a complete assessment.		

Condition Assessment	
Item No: 16	**Item Name: Casino (Officer's Mess)**

Plate 215: Casino building south west view.

Plate 216: Casino building part north elevation.

Plate 217: Casino building north west view.

13.2 Documentary Evidence

Documentary Evidence	
Item No: 16	**Item Name: Casino (Officer's Mess)**
Building modifications:	 **Plate 218: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**
The need for a hospital was emphasised by a typhoid epidemic early in 1912. Some 30 or so patients, were housed in both the work's accident ward, possibly in the nearby works building known as "the Casino"; two people died. *Identified on a 1902 Property Drawing and 1920's Works Outline Plans as "the Casino" the cottage appears on a 1910 drawing, as the Accident Ward. It is recommended that the brick cottage be retained, researched further and perhaps offered to a Historical Society for use as a display centre related to the history of the Works and the Town.* (Fenwick 1993)	
Building timeline:	
1901	The Casino (Officers' Mess) is constructed facing Williwa Street, closest to the cement works. Built under Scheidel's instructions to be used by the company's unmarried officers and mechanics for their meals and social gatherings. It consists of two rooms; one for meals and one as a reading room.
c1908	Casino (Officers' Mess) is converted into an accident ward, which is also made available to the general public.
1912	Accident ward deals with at least 30 typhoid patients during an epidemic in Portland.
Early plans/photographs:	

Documentary Evidence	
Item No: 16	Item Name: Casino (Officer's Mess)

Figure 19: 1902 Plan of works showing Casino building. (Source: as cited in Fenwick 1993)

Plate 219: 1904 View of Casino (Source: 1904 Promotional booklet BCSC Head Office Library as cited in Fenwick 1993:10)

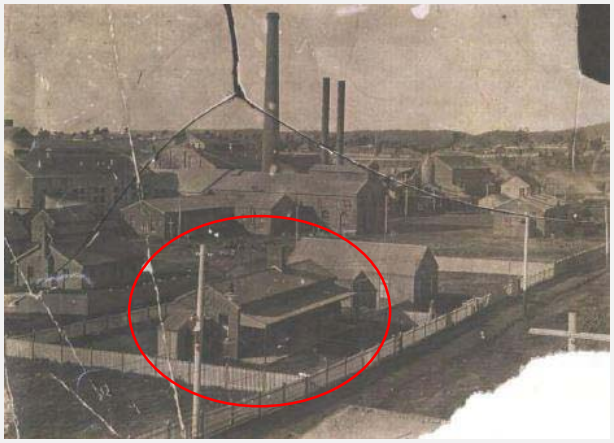


Plate 220: 1914 Casino (Officer's Mess) in the foreground off Williwa Street (Source: Blue Circle Maldon Archives as cited in NBRS 2010)

13.3 Significance Assessment

Significance Assessment	
Item No: 16	**Item Name: Casino (Officer's Mess)**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Casino building has a direct association with the Second Phase of development of the Portland Cement works (1899-1998) as one of the ancillary buildings built for the production of cement.
(b) Associative significance	The Casino building has direct association with Dr August Scheidel, a metallurgist who has been described as the father of the modern cement industry in Australia. The building was instructed by Scheidel to the built as an officer's mess.
(c) Aesthetic significance	The Casino building is a fine example of a Federation style cottage.
(d) Social significance	The Casino building has local social significance for its relationship between The Portland Cement Company and the residents/workers of the township.
(e) Research potential	Does not satisfy this criteria.
(f) Rarity	Does not satisfy this criteria.
(g) Representativeness	Does not satisfy this criteria.
Previous Assessments:	
Summary statement of significance:	The Casino building is of State significance for its historical relationship with the Second Phase of The Portland Cement Works. The building has a direct association with Dr August Scheidel, the father of modern cement industry in Australia and is a fine example of a Federation style cottage and also has social significance for its relationship between The Portland Cement Company and the town.
Note: This Statement of significance should be read in conjunction with the associated statement within this report.	

14. Raffan's Mill and Brick Bottle Kilns

14.1 Condition Assessment

Condition Assessment		
Item No: 18 and 19	**Item Name: Raffan's Mill and Brick Bottle Kilns**	
	 **Plate 221: Raffan's Mill south west view.**	
Description:	Raffan's Mill building is a mixture of brick and corrugated iron clad single storey structure. There are three rooms within the building that are constructed in different stages. The main space with wooden tooth gear/wheel (south west), the room clad in corrugated iron sheeting (north east) and brick clad room with arched openings (south east). A mechanical structure protruding from the south west wall is identified as the old Raffan's Mill. Two Brick Bottle Kilns are located north west of Raffan's Mill.	
Condition:	**Poor**	**Survey date**: 8/9/17
	Exterior	
	North east elevation:	Some broken and missing brickwork. Unsympathetic brick infills. Corroded corrugated iron sheeting.
	North west elevation:	Missing sections of walls. Broken and missing brickwork. Corroded corrugated iron sheeting. Weed growth adjacent to walls. Significant cracks on walls.
	South east elevation:	Missing sections of walls. Broken and missing brickwork. Weed growth adjacent to walls. Arched openings.
	South west elevation:	Missing sections of walls. Broken and missing brickwork. Weed growth adjacent to walls. Significant cracks on walls.
	Roof and roof fittings:	Missing details to timber fascia boards and roof trims. Corrugated iron roof is in poor condition with broken sheets.
	Brick Bottle Kilns	Generally in poor condition. Broken and missing mortar joints. Missing and broken bricks. Top course of bricks missing to south kiln. Steel straps are corroded and some are missing. Lower openings infilled with brickwork. Weed growth.
	Interior	
	Floor:	Material: Stone. Poor to fair. Cracked, uneven floor and rubble and debris in areas. Absent floor to south east room.
	Walls:	Material: Brickwork and Corrugated iron sheeting on timber frames. Missing bricks and cracks. Shows evidence of limestone wash to walls.

Condition Assessment			
Item No: 18 and 19	**Item Name: Raffan's Mill and Brick Bottle Kilns**		
	Doors:	Material: Corrugated iron double leaf doors to north west walls, steel lintels. Missing doors to south east walls. Steel mesh to south east openings.	
	Windows:	Material: Timber frame. Missing windows to south east wall. Steel mesh to south east openings.	
	Ceiling/Roof:	Material: Exposed steel truss. Poor condition. Evidence of water ingress to roof sheeting and timber battens. New timber posts and roof frames to north west room.	
	Machinery:	Wooden tooth gears are exposed to the elements, Blacksmith machinery, boiler/hood, equipment labelled 'Ingersoll Rand'.	
	Structural assessment:	Walls and roofs require assessment.	
	Condition Legend		
	Good		Structurally sound. Requires little attention
	Fair		Structurally sound. Requires minor repair
	Poor		Signs of extensive damage, Requires attention
Integrity:	**Medium**		
	Integrity Legend		
	High	Major features contributing to significance are intact	
	Medium	Retains sufficient features to allow historical interpretation	
	Low	Major features are altered diminishing the ability for historical interpretation	
Significance Grading:	**Exceptional**		
Recommendation:	Implement measures to prevent water ingress to building. Repair missing and broken glazing and timber to doors and windows. Floors generally require cleaning and removal of rubble. Remove weeds adjacent and within building/structures. Should repainting for this structure be proposed, undertake wall finish/paint scraping sample to determine original wall finish. Implement measures to protect exposed machinery. Use machinery and equipment as part of a future Interpretation Plan for the building. Structural assessment required.		

Condition Assessment	
Item No: 18 and 19	**Item Name: Raffan's Mill and Brick Bottle Kilns**

Plate 222: North west view.

Plate 223: South east view.

Plate 224: North east view.

Plate 225: Interior north west room.

Plate 226: Interior north west room with brick infills.

Plate 227: Interior main room showing wooden tooth gears.

Plate 228: Interior main room showing blacksmiths machinery/hood.

Plate 229: Interior main room showing remnant limewash.

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Plate 230: Interior main room showing corrugated iron doors.

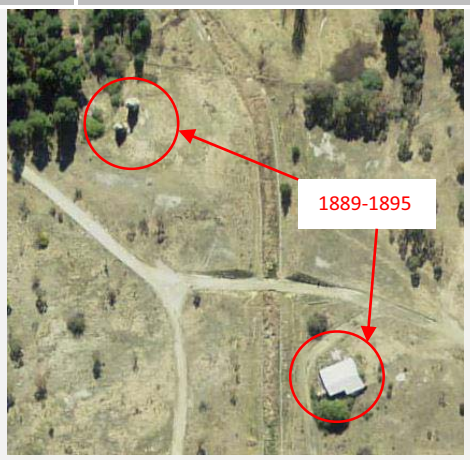
Plate 231: Interior room (south east) showing absent floor and rubble.

Plate 232: Brick Bottle Kilns north east view.

Plate 233: Brick Bottle Kilns view south view.

Plate 234: Brick Bottle Kiln (south) showing broken and missing bricks and weed growth.

14.2 Documentary Evidence

Documentary Evidence	
Item No: 18 and 19	**Item Name: Raffan's Mill and Brick Bottle Kilns**
Building modifications:	 **Plate 235: 2017 Aerial photograph (Source: https://maps.six.nsw.gov.au/)**

The 'Old' Works

Identified as the "old works" on a 1902 Site Layout Drawing the single level brick building is located west of the main works area, between the disused No.3 Quarry and the dam. The standing structure consists of three separate areas and appears to have been part of a more substantial and larger building. Whilst at this stage, no primary source gives details as to the use of the buildings, the mechanical structure fixed through the southern wall is colloquially known as the Raffan Mill. George Raffan was one of the partners in the cement works and limestone leases sold to the New Zealand Mines Trust in 1899. The shaft driven system of wooden toothed gear wheels and the four 1200 mm diameter, Burr Stone Grinding Mill, pans (which remain intact) appear to be positive evidence of the steam driven grinding plant referred to in a number of secondary documents.

The low extended gable roof line is not original and may have been constructed in 1919 when an Agricultural Lime Plant was installed in a portion of the building. A section of the southern end of the building was used as a blacksmiths shop and the blacksmiths forge still stands in the room. The building dimensions are 15.5 metres long, 12.7 metres wide and 6.4 metres high to the peak of the gable. The roof and half of the northern wall are sheeted with galvanised corrugated iron with all other walls being 370 mm thick brick laid in English Bond (alternate header and stretcher). The western side of the building has three large hinged door openings with the northern end having been utilised as a general store area. The remaining room, accessed from the eastern side does not appear to have been put to any post 1902 full time use. There is evidence of a mezzanine level supported by 300 mm timber beams in this room. Windows and a number of unidentified operational openings have been bricked up. The brickwork is in good condition. The mechanical components of the Raffan Mill are considered to be items of high heritage significance and their preservation has been agreed to (Fenwick 1993).

The millstone grinding plant was installed between 1889 and 1895 to grind the cement clinker from the bottle kilns. It is of cast iron with three granite millstones. The large gear wheels have removable timber cogs held in place by pegs. Originally the plant was connected by belt to a small steam engine which no longer remains. Some surrounding structure have also gone (SHR listing).

Static Lime Kilns

Two bottle shaped, static lime kilns are located close to the north west corner of the site. The kilns are said to be the two remaining, of four kilns built by the Cullen Bullen Company in 1883. The kilns are approximately 14 metres high and 5 metres body diameter and constructed from standard bricks to a thickness of 540 mm. Steel clamping bands have been fitted around the body of the kiln at average intervals of 700 mm. Ground filling adjacent to the kilns has ceased and the lower section of the northern most kiln is partially cleared allowing access to the hearth opening. The outside brickwork of the kilns is still virtually complete. As there is no access to the charging level a closer inspection was not possible. Although the northern most kiln is said to have been refurbished and may have been used in the 1940's, both kilns must

Documentary Evidence	
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be treated as unstable and potentially unsafe. The two bottle shaped lime kilns are considered to be items of high heritage significance and their preservation has been agreed to. (Fenwick 1993).	
Building timeline:	
1882	Alexander Currie and George Raffan became the owners of Portion 52 in August
1883	Railway line extended to nearby Capertee.
1884	A one-roomed school was constructed at some distance from the site, known as the Cullen School
1887	Currie and Raffan with others formed the Cullen Bullen Lime & Marble Works, which bought Portion 52 in this year
1889-1895	The Cullen Bullen Lime & Marble Works had become the Cullen Bullen Lime & Cement Company by this date. The company produced cement under the brand name of 'Kangaroo'. The cement was of variable quality and only produced intermittently on site until production ceased in 1895. The only remnants of cement production from this era are the two bottle kilns in the north-west corner of Portion 52 and the old brick building known as "Raffan's Mill".
1894	Village of Portland gazetted, to the south of the cement company's lease, with 200 people recorded as living in the area
1895	Cullen School was moved into the new village of Portland and expanded
1895	The Cullen Bullen Lime & Cement Company failed and was taken over by one of the original partners, George Raffan and his brother John, who opened the Ivanhoe Lime and Cement Works & Colliery
1898	The Ivanhoe Lime and Cement Works & Colliery also failed
1899	The (British-owned) New Zealand Mines Trust through their agent Dr August Scheidel bought the land, plant and leases from the Raffan brothers Scheidel, a metallurgist PhD with gold mining experience, obtained backing for an investment of (Pounds)100,000 to build a cement production plant, of which he remained Managing Director until 1918
Early plans/photographs:	

Plate 236: Date unknown Group of four Bottle Kilns (Source: Blue Circle Maldon Archives as cited in NBRS 2010).

Documentary Evidence	
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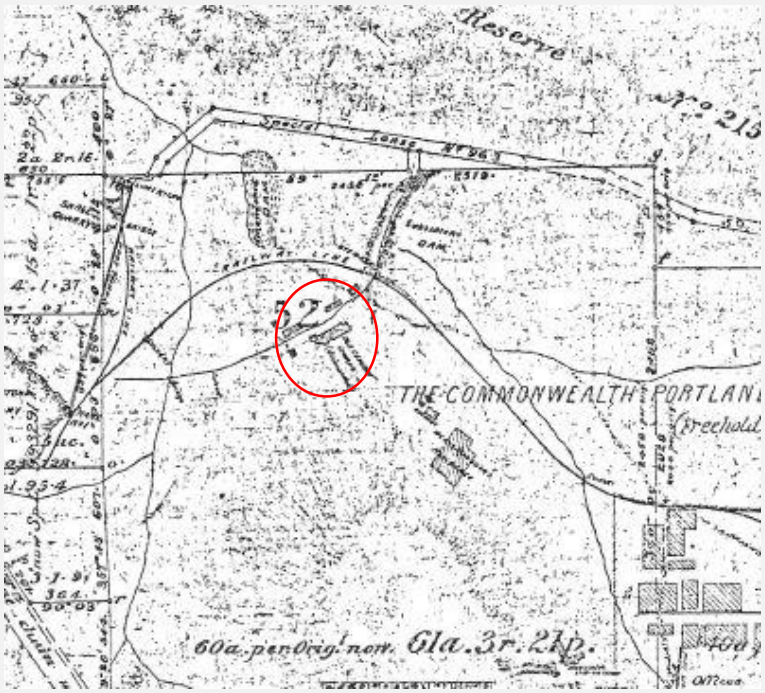

Figure 20: 1902 Plan of works showing Raffan's Mill (Source: as cited in Fenwick 1993).

14.3 Significance Assessment

Significance Assessment	
Item No: 18 and 19	**Item Name: Raffan's Mill and Brick Bottle Kilns**
Assessment criteria:	*NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) incorporating aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter)
(a) Historical significance	The Raffan's Mill and Brick Bottle Kilns has a direct association with the First Phase (George Raffan 1882-1899) as primary structures built for the commercial production of lime and first production of Portland Cement. It's
(b) Associative significance	The Raffan's Mill and Brick Bottle Kilns has a direct association with George and John Raffan, the early pioneers of Portland Cement in NSW.
(c) Aesthetic significance	The Raffan's Mill has technological significance for its contribution to the production of Portland Cement in Australia. The Brick Bottle Kilns have both technological and aesthetic value as distinct examples of nineteenth century kilns set in a landscape setting.
(d) Social significance	The Brick Bottle Kilns are a landmark to the town of Portland and has local social significance for its relationship between The Raffan's Mill and the town of Portland.
(e) Research potential	Raffan's Mill and Brick Bottle Kilns have the potential to yield further technological information on the early production of lime as rare surviving examples of nineteenth century lime producing technologies.
(f) Rarity	The Raffan's Mill and Brick Bottle Kilns are rare remnants of a nineteenth century lime and cement manufacturing plant. It is also a rare intact example for its industrial landscape setting and its relationship to the Portland Cement Works. The wooden wheel machinery is also a rare surviving examples.
(g) Representativeness	The Raffan's Mill and Brick Bottle Kilns are fine examples that evidence nineteenth century lime producing equipment. It is also an outstanding example of the relationship between the early industrial enterprise and the development of a rural town, leading to the development of a much larger cement making complex, The Portland Cement Works.
Previous Assessments:	*Raffan's Mill and Brick Bottle Kilns are of State significance as outstanding and rare remnants of a nineteenth century lime and cement manufacturing plant in a still legible industrial landscape. Their development is closely linked to the origin of the associated town of Portland and to the later development of the Commonwealth Portland Cement Works. The Raffan's Mill and Brick Bottle Kilns represent the genesis of the Portland cement industry in NSW and the beginnings of a century of cement production at Portland. (SHR Listing)*

Summary statement of significance:	The Raffan's Mill and Brick Bottle Kilns are of State significance as outstanding and rare examples of nineteenth century lime manufacturing in NSW. The structures are also significant as they represent the relationship of an industrial enterprise and the development of a rural town, leading to a much larger cement making complex, The Portland Cement Works. The structures are also rare for their industrial landscape setting and the relationship to the second phase of development, The Portland Cement Works.

Note: This Statement of significance should be read in conjunction with the associated statement within this report.

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