



**HERITAGE
COUNCIL**
OF WESTERN AUSTRALIA

REGISTER OF HERITAGE PLACES – ASSESSMENT DOCUMENTATION

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

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

PRINCIPAL AUSTRALIAN HISTORIC THEME(S)

- 2.4.2 Migrating to seek opportunity
- 3.4.3 Mining
- 3.14.2 Using Australian materials in construction

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 101 Immigration, emigration & refugees
- 303 Mining (incl. mineral processing)
- 308 Commercial services and industries

11.1 AESTHETIC VALUE*

Three Lime Kilns, Cockburn have the characteristic form of lime kilns. The form of these utilitarian structures is largely determined by the requirements of the limestone burning process. (Criterion 1.1)

Coogee Lime Kilns have a landmark quality because it is prominently located at the edge of open, level ground beside Cockburn Road structures. (Criterion 1.3)

11.2 HISTORIC VALUE

Three Lime Kilns, Cockburn were established to serve the building and mining industries, both of which developed rapidly during the gold boom period of the 1890s and early 1900s, and provided an ongoing market for lime. (Criterion 2.1)

Three Lime Kilns, Cockburn were part of the important lime burning industry in the Cockburn district in the first half of the twentieth century, and instrumental in the economic development of the area. (Criterion 2.2)

Three Lime Kilns, Cockburn are associated with lime merchants Joseph Tylee and Thomas Briggs & R. J. Rowland, who were prominent in the industry in the Cockburn district from c.1900 to the 1930s, and with the men who found work at the kilns, in particular the Yugoslav and Italian migrants. (Criterion 2.3)

* For consistency, all references to architectural style are taken from Apperly, R., Irving, R., Reynolds, P. *A Pictorial Guide to Identifying Australian Architecture. Styles and Terms from 1788 to the Present*, Angus and Robertson, North Ryde, 1989.
For consistency, all references to garden and landscape types and styles are taken from Richards, O. *Theoretical Framework for Designed Landscapes in WA*, unpublished report, 1997.

11.3 SCIENTIFIC VALUE

Three Lime Kilns, Cockburn have the potential to yield archaeological deposits which relate to the lime burning industry. (Criterion 3.2)

11.4 SOCIAL VALUE

Three Lime Kilns, Cockburn are valued by the local community for their associations with early industry and settlement in the City of Cockburn area attested by their inclusion in the Cockburn Municipal Inventory and the reconstruction of the Coogee Lime Kilns by Cockburn Cement Limited in 1984. (Criterion 4.1)

Coogee Lime Kilns contribute to a sense of place for the local and wider community, being visible from Cockburn Road and associated with a well-kept reserve. (Criterion 4.2)

12.1 DEGREE OF SIGNIFICANCE

12.1 RARITY

Three Lime Kilns, Cockburn is a rare remaining example in the metropolitan area of early twentieth-century single chamber rectangular lime kilns constructed for the commercial production of quicklime. (Criterion 5.1)

Three Lime Kilns, Cockburn are of importance in demonstrating the distinctive lime burning process that is no longer practiced in the Cockburn area. (Criterion 5.2)

12.2 REPRESENTATIVENESS

Three Lime Kilns, Cockburn the group has the characteristic form of rectangular lime kilns and are good representative examples of the type. The form of these utilitarian structures is largely determined by the requirements of the limestone burning process. (Criterion 6.1)

Three Lime Kilns, Cockburn is of significance in demonstrating the importance of the lime production industry in the development of Cockburn district and the State. (Criterion 6.2)

12.3 CONDITION

The condition of *Three Lime Kilns, Cockburn* varies.

Coogee Lime Kilns are in sound condition. Areas of stonework at the base of the walls require re-pointing in lime mortar.

Tylee Lime Kiln is in sound condition. Areas of brickwork at the base of the walls require re-pointing in lime mortar.

Munster Lime Kiln has elements of sound and poor condition. The exterior limestone walls are sound. The timber lintels need to be checked for structural stability. The stacked bricks lining the kiln are vulnerable to pilfering with the upper section of the lining being in generally poor structural condition.

12.4 INTEGRITY

The integrity of *Three Lime Kilns, Cockburn* varies.

Coogee Lime Kilns are of low integrity. The group is not an accurate reconstruction and the kilns cannot fulfill their original purpose. The Coogee Lime Kilns have been reconstructed demonstrating the form of typical lime kilns.

Tylee Lime Kiln is of low integrity. The burning chamber is filled with soil and cannot be used for its original intended purpose.

Munster Lime Kiln is of moderate integrity. It is the most intact of the kilns; it appears that most of the original components remain largely intact. It is very unlikely that the kiln will be re-used.

12.5 AUTHENTICITY

The authenticity of *Three Lime Kilns, Cockburn* varies.

The Coogee Lime Kilns are of low authenticity. The structure is the result of an extensive reconstruction. There are some doubts regarding the accuracy of the reconstruction. Based on the evidence of the other two kilns it is very likely that originally the kilns would have been lined with brickwork. The walls are now completely of limestone which would not withstand the heat of the lime burning process.

Tylee Lime Kiln is of moderate authenticity. The site is almost impenetrably overgrown. Because of this, and the fact that the chamber has been filled, it is now impossible to assess conclusively the level of authenticity of the kiln. On the evidence provided by the stoking holes it seems that the original brick lining of walls and floor may remain in place.

Munster Lime Kiln is of moderate to high authenticity. The kiln is substantially intact. The brick lining probably rises to around half its original height. On the evidence provided by the stoking holes it seems that the original raised brick floor may remain in place.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Irene Sauman, Historian. The physical evidence has been compiled by Alan Kelsall, Architect.

13.1 DOCUMENTARY EVIDENCE

Lime Kilns, Cockburn comprises the Coogee Lime Kilns (c.1905, reconstructed 1984 by Cockburn Cement Limited), consisting of a double kiln and bagging floor; Tylee Lime Kiln (c.1912); and, Munster Lime Kiln (c.1920s). The Coogee Lime Kilns are located on Lot 700 of Cockburn Sound Location 418 on Cockburn Road, Coogee adjacent to Len McTaggart Park. The Tylee Lime Kiln is located on Lot 48 on Location 415 on Cockburn Road, Coogee road reserve adjacent to Powell Reserve. Both sites are owned by the Department of Planning and Infrastructure. The Munster Lime Kiln is located in a limestone quarry on Lot 2 of Location 300 on Beeliar Drive, Munster (formerly part of Mayor Road), and is part of the Munster Wastewater Pumping Station site owned by the WA Water Authority.

Lime, in the form of a dry powder called quicklime, was obtained by burning limestone. In the nineteenth century, lime was used in the building industry for mortar, limewash and render.¹ Lime was used in the mining industry as a fluxing agent for gold extraction and 'slacklime', a low-grade lime from kiln debris, was used in limited quantities in agriculture.² Areas where limestone is available in Western Australia include the extensive limestone ridge along the coast, south from Fremantle.³

The first known limeburner in Western Australia was Robert Ferres, a mason and builder who had arrived in the Colony on the *Atwick* in October 1829 with his brother John and John's wife and daughter.⁴ At the request of Governor James Stirling, Ferres constructed a lime kiln at Fremantle in February 1830 and produced lime for public and private constructions.⁵ In 1861, he wrote a letter in response to the proposed resumption of land known as the Lime-Kiln Grant, which he claimed to have been granted in return for his work.

In Dec. 1829 Govnr. (sic) Stirling requested me to try the stone about Fremantle to see if it would make good lime. I tried this and on my giving a favourable report, he as an inducement for me to erect a Lime-kiln for the supply of the public, told me to select a piece of land for the purpose of limeburning at the same time giving me an order to supply the Govt. with lime at a price fixed by the Civil Engineer, Mr. Revely, on that condition alone I was to get my title. The piece of land I selected was a square about 100 yards along the River, but when the town was extended the Limekiln Grant settled down as Lot 372...

The conditions (the supply to Govt and the public) have been well fulfilled. I built a substantial kiln in February 1830, and supplied the Govt. with all the lime required for the old Govt. Offices and Jail at Perth. I supplied Mr. Leroux, the contractor, with

¹ Cowper, A. D. *Lime and Lime Mortars*, Donhead Publishing, London, 1998 reprint of 1927 publication by HM Stationery Office, London for the Building Research Station, pp. 1-8.

² Pearson, Michael, 'Archaeological interpretation and ethnographic analogy: the lime industry in Western Australia', *Archaeology in Oceania*, Vol. 21 No. 1, April 1986, pp. 94-102; Letter from Robert Ferres to Isaac Wood, 15 June 1861, regarding Lime-Kiln Grant, Fremantle, Batty Private Archives, ACC 1A.

³ Gentili, J. & Scott, D. R. *The Cockburn Lowland*, Geographical Society of WA, UWA, Nedlands, 1962, Research Report no. 44, p. 5; Wingate Michael, *Small-scale Lime Burning: A practical introduction*, Intermediate Technology Publications, 1985, p. 5.

⁴ Erickson, Rica, *Bicentennial Dictionary of Western Australians*, Perth, UWA Press, 1988, p. 1040. John Ferres died in October 1830.

⁵ Letter from Robert Ferres to Isaac Wood, 15 June 1861, op cit; Pearson, Michael, op cit, gives earliest recorded use of lime as being construction of the Fremantle Roundhouse.

about 200 bushels per week all the time the Barracks, Officers' Quarters, Powder Magazine, Dr. Collies and Mr. Drake's buildings were in progress besides keeping up a constant supply for this town. I have burnt about 20,000 bushels of lime on 372 and the next grant, in fact I kept on until the price got so low and firewood so dear (I was forced to have my wood boated at last) that I could not get a living at it.

In 1830 I transferred the allotment to my brother, John, but that made no difference to the lime-burning. When the first kiln wore out I quarried another through solid rock. This last got cleared away when the prisoners came to clear the approaches to the Ferry.⁶

Ferres' kiln appears to have been an unlined shaft-style kiln. Kilns constructed for the commercial production of lime were lined with fire-bricks, which were periodically replaced. A kiln could be operated as a mixed-feed (pot kiln) or separate-feed (patent kiln). In a mixed feed operation the limestone and fuel, generally timber, were placed into the kiln in layers and fired. The burnt lime, mixed with the ash, was removed through a doorway at the side. In a separate-feed operation, the kiln was loaded only with stone, and the timber was burnt in a firebox on the side. Patent kilns produced lime with less ash.⁷ The kilns operated in Western Australia in the late nineteenth and early to mid twentieth centuries were pot kilns.

The process of loading, firing and emptying a kiln took about two weeks, with the firing process occupying two to three days. During firing, the kiln was manned continuously and fuel added as required. The limestone used had to be of a high quality and all of the same type, as stone with a higher shell content burnt more quickly and could cause uneven firing in the kiln.⁸

Burning lime did not require any particular skill and the material was often produced for individual projects at the site, either in a small kiln constructed for the purpose or in a shallow pit. When Thomas Buckingham was building his house at Kelmscott in 1868, he records burning lime in a field nearby.⁹

The first lime kiln in the Coogee/Cockburn Sound district may have been the one constructed in 1831 by Richard Goldsmith Meares for his own use. Meares was one of the settlers who arrived with Thomas Peel in December 1830. With their original grants on the Swan and Canning rivers unobtainable due to their late arrival, the settlers tried to establish themselves on the limestone ridge above Cockburn Sound, but all soon departed for more promising locations.¹⁰

Cockburn Sound and Owen's Anchorage were used as safe harbours for shipping. In 1898, a railway line was constructed from Fremantle to Robb's Jetty at Owen's Anchorage to facilitate the handling of cargo between there and the new Fremantle Harbour.¹¹ An abattoir and meat works was established near the Jetty and properties in the area pastured animals brought in from distant stations, including from the Kimberleys. Small market gardens began to be established. In 1901, Walter Powell built the Coogee Hotel and a store on Rockingham Road, Coogee on Cockburn Sound Locations 417 and 418. In 1903, the railway line

6 Letter from Robert Ferres to Isaac Wood, 15 June 1861, op cit.

7 Wingate Michael, op cit, pp. 9-10.

8 'Cooper's Lime Kilns', *Trust News*, March 1999, pp. 12-14.

9 Buckingham, Thomas Jr, 'Memoirs of Thomas Buckingham, born 10-4-1839', Perth, typescript, [1910], pp. 23.

10 Berson, Michael, *Cockburn: The making of a community*, Town of Cockburn, 1978, p. 12.

11 Gunzberg, A. & Austin, J. *Rails Through the Bush*, Light Railway Research Society of Australia, Melbourne, 1997, p. 207.

was extended to Woodman Point to serve the explosives magazine, which had been relocated there.¹²

In the 1890s and early 1900s, the population of Perth and Fremantle quadrupled due to the gold boom. The increase in population resulted in a corresponding increase in building activity and quantities of lime were needed for the gold mining industry. It was around the late 1890s and early 1900s that a number of lime kilns were established at Coogee for the manufacture of commercial quantities of lime.

The only lime supplier listed in the earliest Post Office Directory (1893) is T. J. (Thomas James) Briggs, who had a 'lime depot' on Hutt (William) Street, Perth.¹³ Another lime burning business known to have been operating in the 1890s was that of Messrs. Smith and Young, which became the Western Australian Builders Lime and Stone Co in 1897. The launch of this company was celebrated on 10 February 1897 by a gathering of some 200 builders, architects and representatives of trades associated with the building industry.¹⁴

By 1900, the entry for Thomas Briggs' lime operation had been upgraded to read 'Briggs & Co Ltd, Lime and stone works, Wellington Street Perth, quarries, Cottesloe and Claremont'.¹⁵ Briggs also had land at Cockburn Sound with his partner R. J. Rowland. This was Lease 7/1641 (later Cockburn Sound Location 543) comprising 125 acres. In the Fremantle Roads Board District Rate Books of 1902-03, which are the earliest surviving rate books for the Coogee area, a lime kiln is listed on Lease 7/1641 under the name of T. J. Briggs, with an associated residence occupied by the manager of the kilns, George Harvey.¹⁶ Briggs' land extended south from what is now the southern part of Parakeet Way to Fairbairn Road, Coogee, and abutted Location 415 on its northern boundary.¹⁷ Thomas Briggs was also involved in public affairs and was mayor of Claremont in 1902.¹⁸

Thomas Briggs' kiln was the only lime kiln recorded in the Fremantle Roads Board District Rate Books in 1902-03. This does not mean there were no other kilns operating, however. The Rate Books only recorded the activities of the people who were rated for the land. In 1905, contractor Thomas McLaughlin and lime merchant Ernest William Kieswetter leased Location 418 from Blanche Powell. Location 418 was the site of the Powell's store, which occupied the northwest corner of the fifty-acre site. An area of perhaps an acre around the store was excluded from the lease. The lease was for seven years, and the lessees right to dig and take away stone from the land was detailed in the lease agreement.¹⁹ No quarry or lime kilns are recorded on Location 418 for any period from 1902-1961, as the land continued to be owned by the Powells for much of that time, but it is highly likely that the Coogee Lime Kilns were established on the site around the time of McLaughlin and Kieswetter's lease. The Post Office

12 Certificate of Title, Vol. 33 Fol. 118; Fremantle Roads Board District Rate Books, SROWA, CONS 5778, Item 2, 1902-03, p. 79; Berson, Michael, pp. 102-103.

13 *Wise's Post Office Directory*, 1893, p. 64.

14 *West Australian*, 11 February 1897, p. 5.

15 *Wise's Post Office Directory*, 1900, p. 547.

16 Fremantle Roads Board District Rate Books, SROWA, CONS 5778, Item 2, 1902-03, p. 79; DOLA, Original Plan 150, Cockburn Sound, 1889-1923; *Wise's Post Office Directory*, 1912.

17 Fremantle Roads Board District Rate Books, SROWA, CONS 5778, Item 2, 1902-03. The kilns on Location 543 are not extant.

18 Erickson, Rica, *Bicentennial Dictionary of Western Australians*, Perth, UWA Press, 1988, p. 310.

19 Certificate of Title, Vol. 33 Fol. 118, 18 May 1905.

Directory lists Ernest Kieswetter as a limeburner at Coogee from 1905 to 1912, the period covered by his lease of Location 418.²⁰

Location 300, the site of the Munster Lime Kiln, had been owned by Edward Mayhew, chemist of Fremantle, since 1889. In 1911, produce dealer William Watson purchased the property.²¹ The Rate Books do not record any quarry or lime kilns on the site in 1902-04.

The next surviving Roads Board Rate Books cover the period 1913-1915. In 1913-14, Walter Powell and his family were still running the Coogee Hotel and store on Locations 417 and 418, and occupying a residence located between the two businesses on Location 416. Immediately south, on Location 415, the kilns of lime burner Joseph Tylee are listed.²² In the Post Office Directory, Tylee was listed as a lime merchant at Bullsbrook in 1911 and at Coogee in 1912. He obtained title to Location 415 in December 1912 and the Tylee Lime Kiln most likely dates from this time.²³ Joseph Tylee was also a mason and stone merchant. He is reputed to have supplied the stone for the University of Western Australia, presumably the original 1913 building, and to have lost heavily on the project.²⁴

Immediately south of Location 415, on Location 543, the lime kilns of Thomas Briggs continued to operate, with George Harvey in residence as the manager.²⁵ There were a number of other lime kilns in the area by 1913, including on Location 5, Hamilton Road, on the estate of E. R. Brockman, and on Rockingham Road on Location 109, which was the estate of E. A. Manning. Herbert Bayers was operating kilns on Hamilton Road on part of Location 154 and lime merchant John Henry Triplett was resident in the street.²⁶ In 1914-15, lime merchant Jack (John) Weedon had established kilns on Barrington Road on Location 561. No lime kiln or quarry was recorded for Location 300, which continued to be owned by William Watson for the purpose of pasturing stock.²⁷

In 1920, lime merchants with operations at Coogee included Briggs and Rowland, John Bradley, McLaughlin & Co, Kiesey Bros and John Weedon. Briggs and Rowland, John Bradley and McLaughlin & Co were also listed as lime merchants in the Post Office Directory listing for Owen Anchorage, indicating some form of warehousing and possible transport of lime by ship.²⁸

The remaining Rate Books for the Coogee area cover the period 1923-1925 and 1927 continuous through to 1961. In 1923, Joseph Tylee continued to be listed as a lime merchant with kilns on Location 415, but the kilns of Thomas Briggs are no longer shown. Millars Timber & Trading Company had purchased Location 543, the site of Briggs' kilns, and there is no indication in the Rate Books that the kilns were operating, but Briggs and Rowland continued to be listed in the Post

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- 20 Fremantle Roads Board District Rate Books; *Wise's Post Office Directory*, 1903-1914.
21 Certificate of Title, Vol. 27 Vol. 187, 5 February 1889 & Vol. 477 Fol. 195, 1 February 1911.
22 Fremantle Roads Board District Rate Books, Item 4, 1913-14, p. 17; *Wise's Post Office Directory*, 1911-1912.
23 Certificate of Title, Vol. 540 Fol. 15, 18 December 1912.
24 Erickson, Rica, *Dictionary of Western Australians, 1829-1914: The Golden Years*, Vol. 5, Perth, 1986, p. 922.
25 Fremantle Roads Board District Rate Books, Item 4, 1913-14, p. 17; DOLA, Original Plan 150, Cockburn Sound, 1889-1923.
26 Fremantle Roads Board District Rate Books, Item 4, 1913-14, pp. 11-17.
27 Fremantle Roads Board District Rate Books, Item 6, 1914-15, p. 21.
28 Fremantle Roads Board District Rate Books, Item 8, 1923-24, p. 1; *Wise's Post Office Directory*, 1920, trade listings p. 635.

Office Directory as limeburners on Rockingham Road, Coogee until 1932.²⁹ George Harvey is listed as manager of the Briggs and Rowland operation at Coogee until 1916, from which time Thomas Briggs' son Ernest, is recorded there until 1925.³⁰ Briggs and Rowland may have continued to operate their kilns on Location 543 under lease from Millars, or they could also have been using the Coogee Lime Kilns.

The operation of the Coogee Lime Kilns on Location 418 is unknown after 1912, when the McLaughlin-Kieswetter lease expired, as there continued to be no entry for them in the Rate Books.³¹ The operation of the Coogee Lime Kilns is attributed to Briggs and Rowland by the local community, and the lack of documentary evidence regarding the site means that no argument either way can be presented for this claim.³² A photograph, which is credited with being of Briggs and Rowlands' lime burning operation, is reproduced in Michael Berson's 1978 history of Cockburn. The photograph shows what could be a representation of the Coogee Lime Kilns.³³

In 1927-28, lime kilns owned by the Kiesey Bros are recorded on Location 417, immediately north of the Coogee Lime Kilns, and G. J. Kiesey is listed as occupying the former Powell residence.³⁴ Carl George and George J. Kiesey, who formed the Kiesey Bros, and lime burner Ernest Kieswetter were members of the same family. The name Kiesey was an anglicised version of Kieswetter, possibly changed around the time of the First World War.³⁵

In 1929, Location 300 was subdivided. Diagram 8659 of the subdivision comprised Lots 1, 2, 7 and 8 on Mayor Road (now Beeliar Drive). The size and shape of Lot 2 in comparison to surrounding lots indicates that the Munster Lime Kiln and quarry were almost certainly in existence at the time of the subdivision. In 1935, Lot 2 was purchased by contractors John James O'Sullivan and William MacNeill. In the 1920 and 1930 Post Office Directories, John J. O'Sullivan is listed as a lime merchant based at Fremantle.³⁶ It is likely that he had been operating the Munster Lime Kiln and quarry on the site prior to the purchase of the land. Sullivan and MacNeill raised a mortgage for £110 at the time of purchase.³⁷ MacNeill is entered in the Rate Books from 1937 as the owner of Lot 2, and his occupation is given as lime merchant.³⁸ Another lime kiln established on Location 300 was on Lot 8, adjoining Lot 2. This was operated by Ivan Ivceovich in the 1930s.³⁹

Employment was available for men at the lime kilns. The work was physically demanding, requiring trolleys of stone and timber to be man-handled up the

29 Fremantle Roads Board District Rate Books, Item 8, 1923-24, p. 1; *Wise's Post Office Directory*, 1914-1932.

30 *Wise's Post Office Directory*, 1914-1932.

31 Fremantle Roads Board District Rate Books, Item 14, 1927-28.

32 Berson, Michael, op cit, p. 102; 1984 plaque on the reconstructed Coogee Lime Kilns.

33 Berson, Michael, op cit, photograph, pp. 110-111.

34 Fremantle Roads Board District Rate Books, Item 14, 1927-28.

35 DOLA, Nomenclature inquiry - Kiesey Street, Coogee, surveyed 1936-1940 and gazetted a public road in 1949, is located on the northern boundary of Location 417 and was named for Carl George Kieswetter, lime merchant who had kilns in the area.

36 Fremantle Roads Board District Rate Books, Item 8, 1923-24, p. 1; *Wise's Post Office Directory*, 1920, trade listings p. 635.

37 Certificate of Title, Vol. 1041 Fol. 408, 3 January 1935.

38 Fremantle Roads Board District Rate Books, Item 23, 1937-38, p. 49.

39 Fremantle Roads Board District Rate Books, Item 20, 1933-1934, p. 48. This kiln is not extant, the land now part of a residential development.

ramps to the top of the kilns. Shift work on cold nights, the heat of the kilns in summer and the lime dust permeating everything added to the difficulties.⁴⁰ Some of the workers are listed in the Post Office Directories of the period. Herbert Baines, Frederick Harvey, William Oaten, Christopher Wrout, Samuel Brooks and Andrew Mortimer are all listed as lime burners at Coogee for various periods between 1912 and 1932.⁴¹

The kilns also provided employment for migrants. Many of the migrants to the Cockburn area were from Yugoslavia and Italy. The migration of young men from the Dalmatian coast was largely a result of younger sons being unable to inherit part of a much-subdivided family landholding. In the 1890s, many went to the eastern goldfields of WA, where they worked with Italian migrants as woodcutters on the woodlines and as miners. When work on the goldfields declined a number of them found employment in Fremantle and the Cockburn district, subsequently taking up land in the area for market gardening. In the 1920s, another wave of migration followed the creation of the State of Yugoslavia and the rise of Mussolini's fascism in Italy, and friends and families joined those already settled in the area.⁴²

The Coogee Lime Kilns are understood to have ceased working in the early 1930s, which coincides with the cessation of Briggs and Rowlands operations in the area in 1932 and the transfer that year of title for the land to dairy farmer George Frederick Powell. Powell operated a dairy on the property until his death in 1944.⁴³ Ray Lees, former mayor of the City of Cockburn, remembers, as a child, collecting milk from Powell's dairy in the 1930s and the kilns were not operating at that time.⁴⁴ In 1949, Location 418 was purchased by dairy farmers Lalla and Gordon Oma.⁴⁵

In 1946, Lot 2, the site of Munster Lime Kiln and quarry, was subject to a mortgagee sale. The property was purchased by Freda Jones of Beaconsfield. The Munster Lime Kiln was not operating by the mid 1940s, but the quarry was being worked by quarryman John Gasper. Ray Lees quarried stone there for his house at Hamilton Hill in 1946-47.⁴⁶

Joseph Tylee sold Location 415 and the Tylee Lime Kiln in 1941. The property was purchased by James Chalmers. Chalmers is entered on the Certificate of Title as an engineer, but in the Rate Books for 1941-42 he is listed as a stone merchant. The Tylee Lime Kiln may have been still operating at this time, but Chalmers ownership was short lived. He died in January 1942. The kiln is recorded in the 1942-43 Rate Books under Chalmer's estate. In 1945, Location 415 was purchased by Stanley and Ella Hore, who operated a dairy farm on the land and the kilns were no longer listed.⁴⁷

Coogee was no longer a major producer of lime. The development of motor transport meant that the proximity of railways and shipping was no longer a requirement for the siting of lime kilns. Lime production moved inland to

40 Berson, Michael, op cit, p. 118, from oral history of Mrs E. J. Stook.

41 *Wise's Post Office Directory*, 1912-1933.

42 Berson, Michael, op cit, pp. 155-166; Cockburn Oral History Tapes, Mrs Florrie Gherardi OH2825/5; Jack Bavich OH 2825/10, Frank Favazzo & Mrs Sarina Mangano OH2825/12.

43 *Wise's Post Office Directory*, 1930-1933; Certificate of Title Vol. 1015 Fol. 20, 13 May 1932.

44 Information provided 17 February 2004 by Ray Lees, former mayor of City of Cockburn, born in 1928.

45 Certificate of Title, Vol. 1118 Fol. 274, 26 May 1949.

46 Information provided by Ray Lees, op cit. The name Gasper is believed to be an anglicisation of Gasperi.

47 Fremantle Roads Board District Rate Books, Item 28, 1941-42, Item 29, 1942-43, Item 32, 1946-47, pp. 45-46; Certificate of Title, Vol. 540 Fol. 15, 26 September 1941, 26 January 1942, 24 May 1945.

Spearwood, where lime merchants M. Katich and the Radonich Bros were operating in the mid 1940s.⁴⁸ A large number of kilns had been established in the Wanneroo, Yanchep, Quinn's Rocks area in the 1930s, and this district became a major producer of quicklime for the next several decades.⁴⁹

In 1950-52, the State Housing Commission purchased Location 415 and 418.⁵⁰ In 1955, Cockburn Cement Limited was established at South Coogee as a cement and lime manufacturer with the latest patent kiln equipment. The Company purchased Location 415 and other land in the area for the quarrying of limestone for its processes. In 1970, Cockburn Cement began dredging for shell sand in Cockburn Sound to supply its lime requirements. The development of the alumina industry in the early 1980s created a new market for quicklime and Cockburn Cement's South Coogee lime kilns were converted from oil to gas firing in 1986.⁵¹

Lot 2, the site of the Munster Lime Kiln and quarry was acquired by the Metropolitan Water Supply Sewerage and Drainage Board (now the WA Water Authority) in 1961. The unquarried eastern half of the Lot became the site of the Munster Wastewater Pumping Station. The kiln and quarry on the western half were left as they were at the time of purchase.⁵²

In the 1970s, a Cockburn Cement Limited subsidiary, Cement Sales Pty Limited, began subdividing Location 415 for the Cockburn Waters residential development. In 1984, Cement Sales purchased the western portion of Location 418 for further residential development.⁵³ The purchase included the site of the Coogee Lime Kilns. As part of the development of the area, Cockburn Cement 'tidied up' the site by reconstructing the kilns.

A plaque on the kilns reads:

These lime kilns
 were constructed in the year 1896
 by T. J. BRIGGS
 to supply lime to the goldfields
 and kilns for local building.
 The kilns were restored in 1984 by
 Cockburn Cement Limited.

Enquiries to Cockburn Cement about the reconstruction failed to provide any details on the project. The reconstruction was handled in an informal manner, as part of the larger development of the area. Someone who was known to work in limestone was employed to reconstruct the kilns.⁵⁴ The extent of the reconstruction is uncertain, but physical evidence indicates that the kilns may have been rebuilt from immediately above the stoke holes. The lack of a brick lining suggests that the original bricks had been removed over the years and were not replaced during the reconstruction. The kilns could not have been used unlined. The prominent position of the kilns beside Cockburn Road most likely

48 *Wise's Post Office Directory*, 1946; Berson, Michael, op cit, p.
 49 'Cooper's Lime Kilns', *Trust News*, March 1999, pp. 12-14.
 50 Certificate of Title, Vol. 1129 Fol. 166, 1 August 1950 & Vol. 1118 Fol. 274 , 3 September 1952.
 51 'Prosperous future set in concrete', *Prospect*, Mar-May 1991, pp. 8-9.
 52 Certificate of Title, Vol. 1093 Fol. 179, 30 October 1961.
 53 Certificate of Title, Vol. 1206 Fol. 887, 25 March 1984; Cockburn Cement Limited, *Report of the Directors*, 1970-1977 and *Report and Accounts*, 1978-1985.
 54 Information provided by Cockburn Cement. The project is not mentioned in the Company's annual reports for the period.

contributed to the removal process in contrast to the relative preservation of the Tylee Lime Kiln, hidden for many years in a tangle of trees and scrub, and the Munster Lime Kiln, on a site with restricted access.

In 1997, *Three Lime Kilns, Cockburn* were entered on the City of Cockburn Municipal Inventory with a recommendation for entry on the State Register of Heritage of Places.⁵⁵

In 1998, the Coogee Lime Kilns and the Tylee Lime Kiln sites were acquired by the WA Planning Commission. In May 2003, the Coogee Beach Progress Association requested the assistance of the City of Cockburn in cleaning up the old kiln site on Cockburn Road, which was overgrown with trees. Presumably, this referred to the Tylee Lime Kiln, but nothing has been done, as the kiln remains overgrown. In October 2003, the Planning Commission received a request from Jobswest in relation to the 'enhancement' of the kilns as part of a work for the dole program. The plan was to provide a frieze-like mosaic depicting the operation of the kilns. The project had not been undertaken at the time of the site inspection in February 2004.⁵⁶

Lime is purported to be the highest volume industrial chemical used in the world and its use in industrial and agricultural areas continues to expand.⁵⁷ The Coogee area continues to be associated with lime production through the location of Cockburn Cement Limited in the district.

In 2004, *Three Lime Kilns, Cockburn* are unused and appear to be under no immediate threat.

13.2 PHYSICAL EVIDENCE

Three Lime Kilns, Cockburn consists of Coogee Lime Kilns, Tylee Lime Kiln and Munster Lime Kiln. Coogee Lime Kilns is a reconstructed, two chamber kiln constructed of limestone. The kilns were constructed for the purpose of heating limestone to affect the chemical process for converting limestone into quicklime. *Three Lime Kilns, Cockburn* are utilitarian structures, with the form determined by the requirements of the lime burning process.

Coogee Lime Kilns are located near the western edge of Len McTaggart Park, a linear reserve that runs beside Cockburn Road extending from Beach Road to Amity Boulevard. Len McTaggart Park is a grassed reserve containing a few isolated groups of trees. The reserve is largely flat apart from where the levels have been manipulated to form the embankment that is an integral part of the lime kilns.

The land starts to rise at the eastern edge of Len McTaggart Park to form a substantial ridge. The ridge area appears to have been developed mainly during the 1970s and 1980s, as a residential area of large houses that seek to take advantage of the views of Cockburn Sound.

Coogee Lime Kilns stand around sixty metres north of Amity Boulevard and twenty metres east of Cockburn Road. The east side of the structure is embedded in the embankment and the east wall serves as the retaining wall.

⁵⁵ City of Cockburn Municipal Heritage Inventory, 1997, Places 31a, b & c.

⁵⁶ Information from Department of Planning and Infrastructure files for Lot 700 and Lot 48, provided by the Department.

⁵⁷ 'Prosperous future set in concrete', *Prospect*, Mar-May 1991, pp. 8-9.

The structure is around three metres high and is aligned with the top of the embankment.

Coogee Lime Kilns is the only structure on the Len McTaggart Park.

The walls of Coogee Lime Kilns are built of limestone and are approximately one metre thick.

The structure consists of two chambers separated by a central recessed 'bagging area'. The chambers are entered off the bagging area through a centrally located full height opening about one metre wide. The tops of the chambers are open and have been covered by reinforcing mesh fixed by welding into steel frames. There is no flooring.

The north and south walls of the structure retain the sloping faces of the embankment. The west walls of the kilns match. Both ends of each wall are buttressed and each wall contains three evenly spaced stoking holes. These segmental arched openings are set at the base of the wall and measure about 500 mm wide by 750 mm high.

The walls are constructed of flush pointed random rubble. The walls contain isolated areas of brickwork repairs. The base of the walls (lowest 900 mm) appears to be of a different stone from the remainder of the structure. These stones are more yellow than the greyer stones used elsewhere. The base appears to have been pointed using lime mortar whereas the pointing to the upper parts are more grey in colour suggesting that a cement rich mortar was used. These two pieces of evidence suggest that only the lower parts of the walls are original.

Coogee Lime Kilns are in sound condition.

Tylee Lime Kiln is around 250 metres to the south of Coogee Lime Kilns. The kiln is concealed within an area of densely planted trees on the eastern edge of the Cockburn Road road reserve beside the western edge of Powell Reserve, which occupies the area between Amity Boulevard and Parakeet Way. Powell Reserve has an irregular shape measuring approximately 200 metres by 150 metres and rises up the ridge to join the residential development. The road reserve comprises a strip of scrubland roughly 50 metres wide running beside Cockburn Road. In the vicinity of the Tylee Lime Kiln site the road reserve consists of rough ground covered by wild grasses and clumps of trees. Typically the trees are medium/low mallee. There are also two or three fig trees. The reserve appears to have been almost completely bulldozed to form a level area with a slight embankment running along the edge of Cockburn Road. Tracks are maintained through the road reserve.

Near the site there are a number of large boulders that have been arranged in a line. The area containing the kilns has been manipulated to form both the mound into which the kiln is embedded and a depression that appears to serve as a storm water sump. It is assumed that the ground levels of the mound behind the kilns are original. It is difficult to get a clear understanding of the site because of the density of the vegetation.

The structure consists of a single chamber that has been filled with soil. Only the west side of the kiln is clearly visible. The west wall is about three metres high and approximately 1200 mm thick and is built predominately of limestone. It has a brick base roughly 900 mm high.

The entrance to the chambers has been covered by the embankment and cannot be seen.

The ends of the west wall of the kiln are buttressed. The wall contains three evenly spaced stoking holes. The three segmental brick-on-edge arched openings are set at the base of the wall and measure about 500 mm wide by 750 mm high.

The random rubble limestone walls are flush pointed. Areas of the wall have been roughly rendered.

The view provided through the stoking holes suggests that the kilns are brick lined. The floor of the kiln appears to consist of raised brickwork supported on a timber structure set around 100mm above the ground.

The site of the Munster Lime Kiln is inside the chain link fenced enclosure to the Munster Wastewater Pumping Station in Beeliar Drive, about 200 metres to the west of the intersection with Rockingham Road. The pumping station enclosure contains free-standing buildings and concrete tanks set into the ground. The kiln is located at the western end of the enclosure.

The area in the vicinity of the site of the Munster Lime Kiln is developing as a residential suburb, but at present it still retains some of the characteristics of a market gardening area.

The Munster Wastewater Pumping Station is set in an undulating landscape. The area of the enclosure has been leveled with a slight embankment running along the south / roadside boundary. A one hundred metre wide strip of land, which rises to the south west corner of the enclosure, runs along the western boundary. This strip follows the original contours of the land and comprises rough ground covered by wild grasses, including wild fennel, and clumps of trees. The trees are a mix of low tea trees (*melaleuca* sp.) or mature Tuarts (*Eucalyptus gomphocephala*).

A former limestone quarry is situated in the area of bush. The west edge of the quarry is about 6 metres from the western site boundary. The quarry stands about mid way between the north and south boundaries of the site. The quarry is irregular in shape, measuring 75 metres by 75 metres, and the floor is about three to four metres below the original ground level. The kiln is partly built into the north side of the quarry.

The walls of the Munster Lime Kiln are built of limestone with a brick lining. The overall thickness is around 1200mm. The walls have a 450mm base of face brickwork

The structure consists of a single chamber measuring five metres by three metres wide and about three metres high. The chamber is entered through a 1200 mm wide by 1800 mm high opening. The head of the opening (outer leaf limestone part) is supported by two timber lintels. The lintels are in poor condition. The head of the opening in the inner brick lining is of arched brickwork. The top of the chamber is open and the floor is hidden beneath a thick covering of rubble and soil. Sheets of galvanised iron in the chamber are most likely remains of those used to roof the structure during the burning process. The chamber is filled with soil to around the top of the stoking holes. The brick lining does not reach the height of the outer leaf.

The sloping faces of the embankment at the edge of the quarry are retained by the east and west walls of the structure. The south wall contains three evenly spaced stoking holes set at the base of the wall. The holes measure approximately 500 mm wide by 750 mm high. The arched openings are of brick construction.

The outer skin of the walls is constructed of flush pointed random rubble. The brick lining is of dry wall construction. The walls do not have mortar joints. The brick courses comprise rows of headers with occasional rows of stretchers. The bricks are coated with lime presumably as a result of the lime burning process.

The view provided through the stoking holes suggests that the floor of the kiln consists of raised brickwork supported on a timber structure set around 100mm above the ground.

Munster Lime Kiln has elements of sound and poor condition. The exterior limestone walls are sound. The timber lintels need to be checked for structural stability. The stacked bricks lining the kiln are vulnerable to pilfering.

13.3 COMPARATIVE INFORMATION

There are seventeen lime kilns entered on the Heritage Council Database, of which five are recommended for the Register and two are on the Register.

Three Lime Kilns, Cockburn are each of similar design, with a single burning chamber and three stoke holes. The *Coogee Lime Kilns* has been reconstructed, and does not have any remaining internal clay fire brick linings.

Cooper's Lime Kilns (P4558), which is on the state Register, were established at Quinn's Rocks (Mindarie Keys) c.1932 by Henry Cooper and his sons, Harry, Athol and Daniel. The site comprises two kilns constructed against a limestone cliff face. These kilns are unusual in that each is divided into two chambers, each chamber having a single stoke hole. Both kilns have an associated bagging floor excavated from the limestone. Much of the lime produced at Cooper's went to the goldfields. Cooper's Lime Kilns operated as The Quinn's Rocks Lime Company, and employed up to 10 or 12 men. Albert Facey and his son were employed there for about 6 months in 1934. At least two of the Cooper boys lived on site with their families. The kilns were operated until the late 1940s, when the supply of high grade limestone had been exhausted.⁵⁸

A conservation plan was prepared for Cooper's Lime Kilns by Palassis Architects in 1997 and the group is understood to have had some restoration work undertaken in 2001.⁵⁹

The *Lime Kilns* (4622) within Tuart Forest National Park, Capel comprise three round kilns arranged in a semicircle, a fourth kiln some distance away, a well and evidence of quarrying. The kilns were possibly constructed in the late 1890s as an industrial complex. The circular design eliminated the problem of 'cool spots', which occurred in kilns with right-angled corners. The kilns are constructed of limestone rubble and were originally lined with bricks, but the lining is not extant. They vary in size from 3.3 to 4.6 metres in diameter. Each has a single stoke hole. Access to the top of the kilns is achieved by earth piled around the structures in a spiral to form a loading ramp. The kilns ceased operation around the mid to late 1930s. Their condition is generally poor.⁶⁰ *Lime Kilns* (4622) is on the state Register.

The Yanchep Lime Company Site, Carabooda was established by Slovenian migrant Joe Hribar in the late 1930s. The site comprises two 'D' shaped kilns and three quarries, as well as the remains of the workers camp area, which includes a

58 Palassis Architects, *Cooper's Lime Kilns conservation plan*, April 1997.

59 'Cooper's Lime Kilns', *Trust News*, March 1999, pp. 12-14.

60 Hammond & Green Pty Ltd and Ecoscape (Australia) Pty Ltd, *Heritage assessment and conservation plan for Lime Kilns, Tuart Forest National Park*, April 1996.

well. The kilns are situated against a steep embankment, and are approximately four by three metres in size and three metres deep. They are separated by a concreted bagging floor measuring six by five metres, which was possibly covered with a corrugated iron roof. The kilns are constructed of rubble limestone masonry lined with a double skin of brickwork and are reinforced with rounded buttresses on each side. One kiln has three stoke holes; similar to those in *Three Lime Kilns, Cockburn*, and the other has two. Railway iron for reinforcement has been added to the structures at some time.

The Company employed between 7 and 10 men, mainly migrants from southern Europe. Some permanent workers lived on site with their families. Menchetti's Ready Lime Putty Company operated the site for a few years in the late 1960s, before it was purchased by Swan Portland Cement Company c.1970, and closed. Menchetti's operated another commercial lime kiln in Neerabup (P9480), which operated during the first half of the 20th century. The Yanchep Lime Company Site, Carabooda is in good condition.⁶¹ The group is not currently on the HCWA database. There are two entries for kilns at Carabooda they are *Spiers Kilns (37,8,39)* (P14299) and *Butcher Kiln (4)* (P9478). None of the Carabooda sites are on the State Register.

There are several lime kilns recorded in the City of Wanneroo in the Neerabup and Nowergup area. These places are associated with commercial manufacturers, have multiple kilns are constructed of brick and limestone and are generally in poor condition. They are; *Dunstan's Kilns (28-32;42;46)* (P9475) Nowergup; *Lunder Kiln (5)* (P9477) Neerabup; *Brady Kiln (3)* (9477) in Nowergup; *East Neerabup Kilns (20 and 21)* (P9479) Neerabup; *Limestone Quarry and 5 Lime Burning Kilns* (P9474) in Neerabup and *Hale Kilns (Kiln 13)* (P9481) Nowergup.⁶²

Old Lime Kiln (P9842) in Carine, is a very small kiln associated with domestic or small scale use.

Outside the metropolitan area several lime kilns are recorded in coastal localities. They are; *Pell Bridge, Quarry and Lime kiln Sites* (P12291) in Yardarino; *Lime Kiln and Quarry – Site of* (P8918) in Port Gregory and three places recorded in Howatharra in Chapman Valley, *Lime Kiln group* (P13670) Lime Kiln – Brick lined (P6356) and *Lime Kiln – Stone walled* (P8619). These kilns are all associated with commercial manufacturing.

There are circular and rectangular kilns at Albany in an area known as Limekiln Point. They date from around 1849 to the 1890s. Photographs indicate they are in generally poor to fair condition.⁶³

Three Lime Kilns, Cockburn are good examples of single chamber rectangular pot kilns dating from the early twentieth century.

13.4 KEY REFERENCES

No key references.

13.5 FURTHER RESEARCH

⁶¹ Palassis Architects, *Yanchep Lime Company Site, Carabooda conservation plan*, July 1998.

⁶² [The City of Wanneroo prepared a report in 2005 identifying Lime Kilns within the city... This report has identified 25 sites, one of which is still burning lime in the traditional method.](#)

⁶³ Hammond & Green Pty Ltd and Ecoscape (Australia) Pty Ltd, *Heritage assessment and conservation plan for Lime Kilns, Tuart Forest National Park*, April 1996.

