



**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.

The documentation for this place is based on the heritage assessment completed by Kristy Bizzaca and Rosemary Rosario, Architectural Heritage Consultant Historian, in August 2004, with amendments and/or additions by HCWA staff and the Register Committee.

PRINCIPAL AUSTRALIAN HISTORIC THEME(S)

- 3.13 Developing an Australian manufacturing capacity
- 3.14 Developing an Australian engineering & construction industry

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 310 Manufacturing & processing
- 504 Depression & boom
- 401 Government & politics
- 101 Immigration, emigration & refugees

11.1 AESTHETIC VALUE*

The interior of *Armada State Brickworks Dustroom & Machinery Shed (fmr)*, with its system of timber elevators and conveyors and associated pan mills and spinners, is visually impressive for its form scale and proportion, and provides a visual representation of the brickmaking process. (Criterion 1.1)

11.2 HISTORIC VALUE

Armada State Brickworks Dustroom & Machinery Shed (fmr) has associations with the development of the brickmaking industry in the Armadale district dating from 1897 through to the present day in 2007. (Criterion 2.1)

Armada State Brickworks Dustroom & Machinery Shed (fmr) was established as a result of the Government Trading Concerns Act of 1912. The resultant

* 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 Ramsay, J. *Parks, Gardens and Special Trees: A Classification and Assessment Method for the Register of the National Estate*, Australian Government Publishing Service, Canberra, 1991, with additional reference to Richards, O. *Theoretical Framework for Designed Landscapes in WA*, unpublished report, 1997.

industries, which included the Byford State Brickworks 1913/1914, the State Saw Mills and the State Implement Works, were established by John Scaddan's Labour Government to supplement Western Australia's relatively underdeveloped economy. (Criterion 2.2)

Armadale State Brickworks Dustroom & Machinery Shed (fmr) reflects the massive building boom in housing and public works, which occurred in the Post World War Two period as a result of a critical shortage of building material. The place also employed a large number of European migrants subsequent to their arrival in Australia as part of the post war immigration program, some of whom were housed on site. (Criteria 2.2 & 2.3)

Armadale State Brickworks Dustroom & Machinery Shed (fmr) has associations with the men and women and their families who worked at the place from the time of its construction dating from 1949 up to its closure in the 1990s. Some of these workers lived, and still live in the Armadale area and were employed at the Brickworks their whole working lives. (Criterion 2.3)

11. 3. SCIENTIFIC VALUE

Despite the removal of the kilns, *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* demonstrates the brickmaking process from the delivery of the primary material through the crushing process to the pressing and drying of the bricks. Some of the extant equipment is of technical importance, in particular the Thos. C. Fawcett 1920 brickmaking and pressing machines. (Criterion 3.3)

11. 4. SOCIAL VALUE

Armadale State Brickworks Dustroom & Machinery Shed (fmr) is highly valued by the local and wider community for its contribution to the history of Armadale, the labour history of the brickworks, and the history of brickmaking in the State. This is demonstrated by its identification by the Armadale & Districts Brickworks Preservation Group and the Institution of Engineers (WA Branch) as a site of significance and containing equipment worthy of preservation. Its social significance as a place of work has also been illustrated by the reunion held in 2002 at which approximately 400 people attended. (Criterion 4.1)

12. DEGREE OF SIGNIFICANCE

12. 1. RARITY

As surviving examples, the Thos. C. Fawcett 1920s brickmaking and pressing machines are rare at both a state and national level, with research to date also suggesting some rarity on an international level. (Criterion 5.1)

The place is rare as a substantially intact fragment of a brickworks remaining in-situ, in which the process of brick making is clearly evident. (Criteria 5.1 & 5.2)

Armadale State Brickworks Dustroom & Machinery Shed (fmr), or Armadale No. 2 Brickworks, is the only extant brickworks complete with in-situ brickmaking machinery developed as part of the Government Trading Concerns, later known as the State Trading Concerns, and is rare within Australia as an extant former government-owned brickworks. (Criterion 5.2)

12. 2 REPRESENTATIVENESS

Notwithstanding the absence of the full process through to firing, *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* represents the brickmaking process used throughout the twentieth century, the basic process of which is still used in the twenty-first century. (Criterion 6.2)

12. 3 CONDITION

The condition of the former industrial building constructed to house the dustroom and machine shed is fair to poor. Some of the asbestos cement sheets are broken, there is white ant infestation in some areas of timber wall lining and some skylights are broken. Walkways, catwalks and stairways have not received maintenance for many years.

The condition of the significant machines, including the Thos. C. Fawcett presses, the Bradley and Craven pan mills, the Monier 'spinners' and the systems of elevators and conveyors used for moving the clay is fair to good as these remain intact in the same state in which they were last used.

12. 4 INTEGRITY

The integrity of *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* is moderate. The original brickmaking system remains intact apart from the removal of all elements relating to the stacking and firing of the bricks. The machinery is not in use and will not be used again in the future due to changes in technology. However, the machines remain capable of demonstrating the former brickmaking process.

12. 5 AUTHENTICITY

Armadale State Brickworks Dustroom & Machinery Shed (fmr) has high authenticity, remaining largely in its original state, without substantial modifications, and with original machines extant.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Kristy Bizzaca, Historian. The physical evidence has been compiled by Rosemary Rosario, Architectural Heritage Consultant.

Although the place is referred to as *Armadale State Brickworks Dustroom & Machinery Shed (fmr)*, the assessment concerns the remnants of the industrial process established in 1949/50 as the redeveloped Armadale Brickworks No. 2. The assessment refers specifically to the dustroom and remaining Thos. C. Fawcett brick presses located in the former machine shed. The recommended curtilage is the dustroom and adjacent eastern end of the machine shed only.

13.1 DOCUMENTARY EVIDENCE

A factor that had a major influence on the development of the Armadale district at the turn of the twentieth century was the construction of Thomas Coombe's Armadale Brickworks in 1902. The first brickworks had started earlier at Cardup in 1897 in the vicinity of a shale deposit, and the quality and quantity of the material led to further geological investigations in the area.¹ These workings were followed by the establishment of the State Brickworks in Byford in 1913/1914.²

In 1911, John Scaddan's Labour Government was elected to power in Western Australia. It was this Government that began to establish as well as purchase various manufacturing and service businesses. There was some controversy about this activity as it was in direct competition with private enterprise, but it was also seen that such State owned industries were in the public interest especially in light of supplementing the relatively underdeveloped Western Australian economy.³

It has been argued that a number of the State Government's industries were initiated in answer to problems in the economy; for example, the high cost of imported farm machinery was offset by the manufacture of the products by the State Implement Works.⁴ With the implementation of the Government Trading Concerns Act, 1912, the State Saw Mills, the State Implement Works, the State Shipping Service, the State Hotels, meatworks, ferries, tramways, the State Quarry at Boya and the State Brickworks all commenced operation.⁵

The State Brickworks is said to have been developed in response to the high cost of building materials for workers' homes.⁶ In 1913, work began on the building of a State owned and run brickworks in the suburb of Byford at Armadale, an area

¹ Popham, D., *First Stage South: A History of the Armadale-Kelmscott District*, Western Australia, Town of Armadale, 1980, pp. 91 - 92.

² Ibid, p. 109.

³ Le Page, J. S. H., *Building a State: The Story of the Public Works Department of WA 1829 - 1985*, Water Authority of WA, 1986, pp. 385 – 386; Snooks, D., 'Development in adversity 1913 to 1946', in Stannage, C. T. (ed.), *A New History of Western Australia*, UWA Press, Nedlands, 1981, pp. 261 – 262; Black, D., 'Party Politics in turmoil 1911 – 1924', in Stannage, op. cit., p. 383. Historian David Black noted that there were precedents to this activity such as government owned gold batteries and timber mills. (Black, op. cit., p. 383.)

⁴ Black, op. cit., p. 383.

⁵ Le Page, op. cit., pp. 386 – 387; Snooks, op. cit., pp. 261 – 262. The 1912 Government Trading Concerns Act was superseded by the Coalition's State Trading Concerns Act of 1916, which gave Parliament more control over the State industries and their development. (Le Page, op. cit., p. 387.)

⁶ Black, op. cit., p. 383.

already known for its brickmaking industry.⁷ In the 1913/1914 financial year a railway siding was built and plant installed at the Byford site including a Hoffman kiln.⁸

The operation of the Byford State Brickworks commenced in proper in April 1915 and in the first full financial year 6, 732, 350 red bricks were made. The majority of these, approximately 5 million, were sold to State Government Departments.⁹

The building industry, as with other industries as a whole, was impacted by the outbreak of World War One in 1914. This was largely due to economic depression and general wartime conservatism.¹⁰ The production rate of the Byford Brickworks was greater than demand, which led to the intermittent operation of the factory.¹¹ In the year after the War, 1919/1920, demand rapidly increased due to a shortage in construction materials and the years following were profitable for the State enterprise. By 30 June 1922 the Brickworks had been able to repay the losses incurred during the war years.¹²

In the Inter-War years, the Byford Brickworks began to produce what are known as 'fancy' bricks. Many of these designs were used by the Architectural Division of the Public Works Department for public buildings, and the 'fancies' became well known State Brickworks products.¹³

In 1937/1938, management of the State Brickworks was taken over by the State Saw Mills, possibly as an attempt to allow the complementary industries to operate more effectively.¹⁴

The Byford Brickworks operated at a modest profit during the Inter-War period but was again affected by World War Two, in the period 1939 to 1945. The building industry was impacted by a downturn in spending for work programs and a loss of manpower. By 1944, the Annual Report for the State Brickworks stated that it was the only metropolitan clay brick manufacturer to still be in operation.¹⁵

The post World War Two period brought about significant changes to the State. This was primarily as a result of rapid expansion due to the massive post World War Two Australian reconstruction and immigration policies and the Western Australian industrial and mineral boom of the 1950s to the 1970s.¹⁶ The general feeling of prosperity and jubilation immediately following the War had already

7 Popham, op. cit., pp. 91 – 92, 109.

8 Le Page, op. cit., p. 388.

9 Le Page, op. cit., p. 388.

10 Le Page, op. cit., p. 389; Seddon, G. & Ravine, D., *A City and its Setting*, Fremantle Arts Centre Press, Fremantle, 1986, pp. 169 – 176; Hocking, I., 'Growth and Change in Central Perth', in Pitt Morison, M. & White, J. (eds.), *Western Towns and Buildings*, UWA Press, Nedlands, 1979, p. 276.

11 Le Page, op. cit., p. 389.

12 Ibid, pp. 389 & 467.

13 Le Page, op. cit., p. 389.

14 State Brick Works Annual Report & Balance Sheet for twelve months ended 30th June 1938, in AN 172/3, Acc. 1060, Item 3, SRO.

15 State Brick Works Annual Report & Balance Sheet for twelve months ended 30th June 1944, in AN 172/3, Acc. 1060, Item 3, SRO; Le Page, op. cit., p. 467.

16 Seddon & Ravine, op. cit., p. 187; Alexander, I., 'The Central Area', in Gentili, J., (ed), *Western Landscapes*, UWA Press, Nedlands, 1979, p. 412.

begun to make itself felt on the building industry with demand for construction materials increasing.¹⁷

Critical shortages in building supplies are said to have played havoc in the commencement and completion of government projects and housing programs in the mid to late 1940s and early 1950s.¹⁸ The Public Works Department (PWD) also reported that 'Since April 1946, building costs have increased by approximately 118 per cent.'¹⁹ With its commitment to reducing costs of materials and increasing supplies as part of the reasons for the State Trading Concerns, the PWD was determined to construct a second, up-to-date, government brickworks at Armadale.²⁰ At the same time, the buildings, plant and kilns at Byford were in a bad state of disrepair at it was intended that the No. 2 State Brickworks at Armadale would replace the earlier factory.²¹

Excavation commenced at the Armadale site in 1949/1950.²² The new brickworks comprised two sections: the No. 2 Pressed Brickworks (the subject of this assessment) and the No. 3 Wire-cut Brickworks, located to its north. Also on the site were an administration complex (incorporating a manager's office, general office, and attached garage), a weighbridge office to the road, an amenities block and single men's quarters.²³

Construction of *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* occurred in the early 1950s although part of the plant went on line in 1953/1954.²⁴

The plans for the No. 2 Pressed Brickworks were drawn by the State Government's Public Works Department (PWD)²⁵ with important input from Armadale's first works manager Mr. T. P. Elston.²⁶ Those sections that related specifically to the crushing plant and brickmaking operations were done in association with equipment suppliers including Redler Conveyors Ltd from Gloucestershire, England and Thos. C. Fawcett Ltd from Leeds, England.²⁷ The plant supplied by the Thos. C. Fawcett engineering company included second-hand patented brickmaking and pressing machines dating from the 1920s (still

17 State Brick Works Annual Report & Balance Sheet for twelve months ended 30th June 1945, in AN 172/3, Acc. 1060, Item 3, SRO.

18 PWD Annual Report, 1950/1951, pp. 8 – 9, in *Votes & Proceedings*, 1951, Vol. 2.

19 Ibid, p. 9.

20 PWD Annual Report, 1949/1950, p. 14, in *Votes & Proceedings*, 1951, Vol. 2.

21 State Brickworks Western Australia, Annual Report, Year ended 30th June 1955, p. 2, AN 172/3, Acc. 1060, Item 3, SRO.

22 PWD Annual Report, 1949/1950, p. 14, in *Votes & Proceedings*, 1951, Vol. 2; Popham, op. cit., p. 142. Certificate of Titles show that the State Brick Works were registered as the owners of the Armadale property in 1950 (Lot 197 and portion of Lot 196 being approximately 40 acres) and in 1951 (Lot 1 on Diagram 9161 being approximately 24 acres) and in 1950. (Certificate of Title, Vol. 1125, Fol. 757; Certificate of Title, Vol. 1120, Fol. 94.)

23 Various drawings in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO. Workers' residences including that for the manager were constructed on land opposite the Brickworks on Perth-Bunbury Road, now South Western Highway. (Ibid.)

24 New State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO; State Brickworks Western Australia, Annual Report, Year ended 30th June 1956, pp. 5 & 8, AN 172/3, Acc. 1060, Item 3, SRO.

25 State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO.

26 State Building Supplies Annual Report, 30/6/1960, p. 9.

27 Redler Conveyors Ltd Dudbridge Works, Stroud, Glos., Eng., WA State Brickworks, 20/2/1951; &, New State Brickworks, details of foundations for brick machines etc., Drwg No. 28, 16/2/1951, both in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO

extant, located in the machine shed).²⁸ The pan mills dating from the 1920s/1930s (located in the dustroom) were produced by English engineering company Bradley & Craven Ltd, Wakefield.²⁹

The No. 2 Pressed Brickworks comprised two parts: the dustroom, in which the primary material went through the crushing process; and, the machine shed, in which the brick presses and kilns operated.³⁰ The crushing process was carried out in a double volume steel framed and fibro clad shed with a basement level (known as the dustroom) that was connected via walkways and conveyors to the adjoining machine shed. This was a large single storey warehouse facility of similar construction, which also accommodated the brickmaking and pressing machines, two zigzag kilns and a toilet and shower block.³¹ Located centrally between the dustroom and the machine shed were a fitting shop and several storage rooms.³²

The primary material (such as clay and shale) was placed in bins located along the exterior of the eastern elevation of the dustroom. The material was shifted through the first stage of the process via a short conveyor to the Bradley & Craven pan mill crushing plant (five pan mills in total). A timber bucket conveyor took the smaller pieces to the sieves (five sets) where the fines were separated from the coarser material. Different conveyors systems either returned the larger pieces to the pan mills where it would be recrushed, or sent the fine material to the feeder bins.³³

The material in the five feeder bins was slowly sifted through an opening at the bottom of the container to the eight Thos. C. Fawcett brickmaking and pressing machines. The eight machines were arranged in mirrored pairs, and each pair was operated by a single worker located between the two machines. The machines first mixed the dry material with water to create a solid, which could then be cut by a pug mill auger and set into the rough moulds. The rough bricks were then pressed and cut from the moulds and pushed by the machine out onto a small conveyor where the bricks were then taken by workers to the setting tables ready for the kiln. Any damaged bricks were dropped onto a small conveyor system, which led back to the pan mills for reprocessing.³⁴

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- 28 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004; see also copy of Thos. C. Fawcett Ltd., Catalogue No. 46, n.d., provided to Kath Coulthard, Armadale Brickworks Preservation Group by the City of Leeds, 20/8/2000.
- 29 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, australbricks, 1/6/2004.
- 30 Proposed extensions to the north end of State Brickworks, 24/5/1956, in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO.
- 31 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004; New State Brickworks, Elevations, Drwg No. 6, 1/6/1950, in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO.
- 32 New State Brickworks Armadale, Machine House Layout, Drwg No. 3, 16/5/1950, in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO. The three store rooms formed part of the lower level of the dustroom section.
- 33 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004; New State Brickworks Armadale, Section Machine House, Drwg No. 5, 15/5/1950; &, New State Brickworks Armadale, Machine House Layout, Drwg No. 3, 16/5/1950, in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO.
- 34 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004; New State Brickworks Armadale, Section Machine House, Drwg No. 5, 15/5/1950; &, New State Brickworks Armadale, Machine House Layout, Drwg No. 3, 16/5/1950, in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO.

The entire process undertaken in the dustroom was a dry crush, which meant the both the workers and the machines were coated with a layer of dust. Long-time employee Colin Lock recalled that you could tell where a man worked in the brickworks based on the kind of dust he had on his clothes; that is, white dust meant the person worked in the dustroom and red dust that they worked in the 24 hour kiln burners.³⁵

At this time the workers did not have the safety equipment common today such as masks and safety glasses to protect them from hazardous material. For some time, part of the work also involved intense manual labour such as the shoveling of the fine material by hand into the feeder bins, the once a week cleaning of the pan mills, and the stacking of bricks onto the settling tables and then later carrying to and from the kilns.³⁶ It was also a dangerous place to work. Over the years several workers were injured or killed in the pan crushing mills and at least two fires occurred in the dustroom when the sieves dropped material or actual pieces of the mesh itself fell onto conveyors.³⁷

In 1953/1954, Armadale No. 2 Pressed Brickworks produced 13,476,181 bricks.³⁸ The second zigzag kiln had only come on line in November 1953, which meant that the capacity increased the next year with 18,408,154 bricks made.³⁹ In comparison to this, 11,498,955 bricks were produced at Byford in 1954/1955 and 5,378,440 bricks at Armadale's Wire-cut Brickworks.⁴⁰

The State Brickworks were by this time focusing on making cream, salmon and other 'fancy' bricks in order to compete with other brick manufacturers.⁴¹ The majority of these, including those produced at Armadale, were used in the construction of government projects such as Royal Perth Hospital, the Perth Chest Hospital and a number of state high schools.⁴²

By 1955/1956, all the brick presses had been installed at *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* and the first repair work had been done to fissures and expansion to the zigzag kilns. A prefabricated shed was erected on site for the storage of white clay and the machine shed at No. 2 Pressed Brickworks was extended.⁴³ It was at approximately this time that it was reported that there were 3 staff members and 93 waged employees at No. 2.⁴⁴

35 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

36 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

37 Ibid.

38 State Brickworks Western Australia, Annual Report, Year ended 30th June 1956, p. 5, AN 172/3, Acc. 1060, Item 3, SRO.

39 Ibid, p. 5; State Brickworks Western Australia, Annual Report, Year ended 30th June 1955, p. 2, AN 172/3, Acc. 1060, Item 3, SRO.

40 State Brickworks Western Australia, Annual Report, Year ended 30th June 1956, p. 5, AN 172/3, Acc. 1060, Item 3, SRO.

41 State Brickworks Western Australia, Annual Report, Year ended 30th June 1956, pp. 5 & 7, AN 172/3, Acc. 1060, Item 3, SRO.

42 State Brickworks Western Australia, Annual Report, Year ended 30th June 1956, p. 7, AN 172/3, Acc. 1060, Item 3, SRO; Public Works Department Annual Report, 1954/1955, pp. 15 – 17, in *Votes & Proceedings*, 1957, Vol. 4.

43 State Brickworks Western Australia, Annual Report, Year ended 30th June 1956, pp. 7 - 8, AN 172/3, Acc. 1060, Item 3, SRO; Drawings dated 20/2/1956, 5/6/1956 & 24/5/1956 in State Brickworks – Armadale, PWD 3238, WAS 399, Cons. 6159, SRO.

44 State Brickworks Western Australia, Annual Report, Year ended 30th June 1955, p. 4, AN 172/3, Acc. 1060, Item 3, SRO.

Many of the men and women who worked at the State Brickworks from 1949/1950 up to its closure in the 1990s lived, and still live in the Armadale area, and some, like Colin Lock, were employed at the brickworks their entire working lives. Some residential accommodation was provided for workers in particular staff, for whom standard government housing was constructed on the opposite side of South Western Highway, as well as the on-site quarters for single men.⁴⁵

Many of the single men employed were migrants recently arrived to Western Australia. The establishment of the Armadale State Brickworks was concurrent to Australia's massive Post World War Two immigration program, under which persons were required to work for two years in placements directed by the Government.⁴⁶ The employment of migrants was not without problems, especially between nationalities who had been 'enemies' during World War Two. Former workers recalled animosity towards German migrants with a few of the Australian workers refusing to speak to them at all.⁴⁷

The migrants employed at *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* were mainly from Italy and Holland. At certain times, there was tension among the workers and some of this occurred because of the unions. Initially this was related to the employment of Dutch and Italian workers over 'Britishers'⁴⁸, but later turned into a dispute over the employment and sacking of two Dutch non-union members. The dismissal of the two men, who resigned from the Federated Brick, Tile & Potteries Industrial Union of Australia (WA) as conscientious objectors on religious grounds, became quite controversial and there was much comment and letters in the press about compulsory unionism, migrant assimilation and religious tolerance.⁴⁹

By the same token, many migrants – and the workers as a whole - developed strong friendships. Mrs. K. Coulthard's father, who worked at Armadale's Wire-cut Brickworks, helped several Italian men learn English and fill out such government forms as taxation returns.⁵⁰ A number of the Italians stayed at the single men's quarters or lived nearby the brickworks becoming members of the local community.⁵¹ For example, Pasquale Di Giacomo arrived in Western Australia at the age of nineteen in 1953. His first job at the newly opened Armadale State Brickworks was shoveling coal and later he was a 'settler' (taking the pressed bricks from the conveyors and stacking them on setting tables) and a forklift driver. Mr. Di Giacomo eventually retired in 2000 at 65 years of age after

45 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004; Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

46 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004; Evans, K., 'Dreams and Disappointments: The Displaced Persons Scheme in Western Australia', in Gregory, J. (ed), *On the Homefront: Western Australia and World War II*, UWA Press, Nedlands, 1996, pp. 266 – 267.

47 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004; Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

48 See State Brickworks, Works Committee, AN 172/1, Acc. 1060, Item 551, SRO.

49 See State Brickworks Armadale – Dispute, AN 172/1, Acc. 1060, Item 341/1958, SRO.

50 All information from Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

51 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

working at the brickworks all his life. He also married and raised a family in the area.⁵²

In 1957 the State Brickworks and the State Saw Mills were amalgamated under the name of the State Building Supplies and this took effect from 1 July.⁵³ It was thought that the name State Building Supplies better reflected the activities of both organisations as suppliers to the building industry.⁵⁴

In reality, the business of the State Building Supplies was not as positive as had been hoped in the economic prosperity following World War Two. From mid 1956 salmon and cream bricks were starting to be stockpiled and production had been curtailed at both the Wire-cut Brickworks and at Byford.⁵⁵ Over the next few years, no credit/profit was reported for the State Building Supplies in the Annual Reports, and by June 1959 it was noted that the decline of the timber industry had also resulted in stockpiling.⁵⁶

On 21 March 1959, Albert Hawke's Labour Government was defeated and Sir David Brand's Coalition Government came into power on 2 April.⁵⁷ A policy of the newly elected Government was to encourage private enterprise to its maximum potential and one of the ways it proposed to achieve this was the selling of the State Trading Concerns; thus removing it from the competition and ensuring that private businesses would be able to compete for Government contracts.⁵⁸ On 18 May 1960, the State Government announced its plans to sell State Building Supplies.⁵⁹

The imminent sale was of much concern for workers employed at the mills and brickworks, including the 121 people at Armadale No. 2. Workers were worried about job security, many trade union meetings were held to discuss the issue, and a number of commentaries were made in the press about the impact of privatisation on these employees and their communities.⁶⁰

State Building Supplies was purchased by international engineering and construction company Hawker Siddeley Group Ltd of London on 15 August 1961.⁶¹ The former State enterprise operated under the name of subsidiary Hawker Siddeley Building Supplies Pty Ltd, which had been formed on 1 July

⁵² *The West Australian*, 11/11/2002.

⁵³ State Building Supplies Annual Report, Year ended 30/6/1957, p. 1; see also Certificate of Title, Vol. 1133, Fol. 39. The State Building Supplies was registered as the owner of the Armadale Brickworks property on 12 August 1957. (Ibid.)

⁵⁴ State Building Supplies Annual Report, Year ended 30/6/1957, p. 4.

⁵⁵ State Building Supplies Annual Report, Year ended 30/6/1957, pp. 6 – 8, 22.

⁵⁶ Public Works Department, 1957/1958, p. 85, in *Votes & Proceedings*, 1960, Vol. 4; Public Works Department Annual Report, 1958/1959, p. 79, in *Votes & Proceedings*, 1960, Vol. 4; Public Works Department Annual Report, 1959/1960, p. 81, in *Votes & Proceedings*, 1960, Vol. 4; State Building Supplies Annual Report, Year ended 30/6/1959, p. 1.

⁵⁷ State Building Supplies Annual Report, Year ended 30/6/1959, p. 2; *Governors and Premiers of Western Australia*, The Constitutional Centre of WA, West Perth, 2002, pp. 48 – 49.

⁵⁸ State Building Supplies Annual Report, Year ended 30/6/1959, pp. 19 & 20.

⁵⁹ State Building Supplies, Annual Report, Year ended 30/6/1960, p. 2. It should be noted that concurrent to these plans a review of the operations of the State Building Supplies was being undertaken and it was found that a large amount of capital would have to be sent in the short term to keep up with modern improvements. (State Building Supplies, Annual Report, Year ended 30/6/1960, pp. 10 – 11.)

⁶⁰ Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004; State Building Supplies Annual Report, Year ended 30/6/1959, p. 20; State Building Supplies, Annual Report, Year ended 30/6/1960, p. 11.

⁶¹ Certificate of Title, Vol. 1133, Fol. 39.

1961 to take over this business.⁶² At the time, Hawker Siddeley was one of the world's biggest enterprises and its WA holdings were reported to be 'the largest and most comprehensive Building Supplies Company in WA'.⁶³

Armadale State Brickworks Dustroom & Machinery Shed (fmr) continued to produce bricks subsequent to the purchase. It does not appear that there was a significant impact from the change in ownership on the former State employees, and employment actually increased with the construction of 3 new tunnel kilns and extruders by c. 1968.⁶⁴

It was during the 1960s that women began to be employed at *Armadale State Brickworks Dustroom & Machinery Shed (fmr)*, including both single women and working mothers. The majority of the women were employed as 'settlers' and stacked the bricks from the conveyors to the tables.⁶⁵ Former employee Norma Chaytor later recalled that she

suffered terribly from the physical demands of the cleaning, sorting and stacking bricks – she couldn't even hold a cup of tea in her hands and constantly had sore wrists, elbows and shoulders.⁶⁶

Attitudes towards the women were mixed with some of the men thinking that it was too hard to be 'women's work' as well as the difficulty in 'watching their behaviour' in front of the women workers.⁶⁷ The women were also subject to the attitudes of members of the general community, which at the time was still conservative towards women workers, and were occasionally at the receiving end of 'odd looks' when they shopped in their dusty work overalls and boots.⁶⁸

Still, there was a great sense of camaraderie between the workers at Armadale State Brickworks. Indeed, although the Brickworks was to change hands a number of times, a feature of the place has been the ongoing employment of the Armadale workers and their 'migration' from company to company. This in turn has contributed to the relationship of the workers and over the years many social events have been held.⁶⁹

On 6 December 1972, Armadale State Brickworks was purchased by the Monier company and remained in brick production.⁷⁰ While in this ownership (in the 1970s), the original feeder bins were replaced with Monier 'spinners', a type of bin developed by the company to remove the need for manual shoveling of clay

62 'Welcome to Hawker Siddeley: Induction Booklet', n.d. [c. 1969], p. 3, Battye Library.

63 Ibid, p. 3.

64 Ibid, p. 3.

65 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004; *Comment News*, 29/10-4/11/2002.

66 *Comment News*, 29/10-4/11/2002.

67 Ibid; Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

68 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

69 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004; Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004; *The West Australian*, 11/11/2002.

70 Certificate of Title, Vol. 1133, Fol. 39. The official name of the company on this Certificate of Title is Concrete Industries (Monier) Ltd. (Ibid.)

into the feeder bins.⁷¹ It was also during this time that a new, modern brickmaking plant was built on the western part of the site.⁷²

In December 1983, the place was again sold, this time to Bristile Ltd.⁷³ The brickworks operated under the name of Metro Bricks.⁷⁴ Bristile was taken over by Austral Bricks in 2003.⁷⁵

During the 1980s a downturn in the brick industry resulted in making redundant all the workers on the number three shift, leaving only two shifts at *Armadale State Brickworks Dustroom & Machinery Shed (fmr)*. The number three shift included all the female employees.⁷⁶

The zigzag kilns in the No. 2 section of Armadale State Brickworks were demolished in the mid 1980s but it was not until the 1990s that brickmaking ceased entirely at the former State Brickworks. (Note: The Thos. C. Fawcett brickmaking and pressing machines were used up to this time.)⁷⁷ This seems to have coincided with the automation of the 1970s plant in 1997 to take on the bulk of production.⁷⁸

The late 1990s and 2000s has seen developing interest in the cultural heritage significance of *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* because of its historical, scientific and social values. In 1995, the Brickworks site was identified in the City of Armadale's Municipal Heritage Places Inventory.⁷⁹ General interest in the local community's historic associations with quarrying and brickmaking led to the formation of the Armadale & Districts Brickworks Preservation Group in 1998. Membership consists of mainly past employees and families of Armadale State Brickworks.⁸⁰

Proposals for the redevelopment of the former Armadale State Brickworks site to make way for site upgrades became public knowledge around this time. Due to the perceived cultural heritage significance of the site, in particular the dustroom section, the Armadale and Districts Brickworks Preservation Group, with the support of the Heritage Panel of the WA Branch of the Institution of Engineers, referred the dustroom to the Heritage Council of Western Australian for consideration for possible entry into the Register of Heritage Places. In November 2001, the place was added to the Heritage Council's assessment program.⁸¹

71 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

72 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

73 Certificate of Title, Vol. 1500, Fol. 671.

74 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

75 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

76 Information provided by John Williams, Letter from K. Coulthard dated 16/6/2004; Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

77 Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

78 Ibid.

79 O'Brien Planning Consultants, 'City of Armadale Municipal Heritage Inventory', prepared for the City of Armadale, 1995, LGA Site No. A31.

80 Letter from K. Coulthard dated 16/6/2004; Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004.

81 Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004; HCWA Files: 15829.

As part of its efforts to preserve the machinery and buildings associated with Armadale State Brickworks, the Armadale and Districts Brickworks Preservation Group has preserved brickmaking machines, a conveyor belt and a brick settling table earmarked for disposal. These machines are currently in storage.⁸²

In November 2002, a reunion was held in the Armadale Town Hall to mark the 100th anniversary of the opening of the first brickworks in Armadale. The event was organised by the Brickworks Preservation Group, under President Kath Coulthard. More than 400 people attending the reunion, including many former employees of Armadale State Brickworks. During the afternoon, several short interviews were recorded as people reminisced and read through the short histories and photographs put on display for the day.⁸³

In March 2007, the place is still vacant and is owned by Austral Bricks.

13.2 PHYSICAL EVIDENCE

Armadale State Brickworks Dustroom & Machinery Shed (fmr) is located on the western side of the South Western Highway approximately five kilometres south of the Armadale town centre, and is now owned by Austral Bricks. The site comprises an area of approximately twelve hectares and is currently an operating brick yard and sales centre. The facility constructed as part of the development of the Armadale Brickworks No. 2 plant in 1949/50 is located in the southern section of the site and is accessed from the main entrance road located adjacent to the southern site boundary. A recent brick display, office and showroom mark the entrance to the site. A disused office building is located west of the showroom between it and the former industrial facility.

The industrial facility comprises a large machine shed constructed of steel frame clad with corrugated asbestos cement sheets with a narrow, double volume structure along the eastern end that comprises the dustroom. The entire structure is designed around the brickmaking process. The dustroom is open on the southern end. The ground on which the facility is constructed slopes down from the main road, and therefore the entry to the dustroom from the east is at ground level while steps down from the road on the south provide access to the machine shed located on the lower side of the site.

The interior of the dustroom comprises a long narrow space with a high roof. It is linked to the remainder of the facility by a staircase located approximately in the centre of the space. A steel framed walkway elevated above the ground along the eastern wall overlooks the main industrial operations. The adjacent wall is timber lined with evidence of white ant infestation in some areas. There are openings in the gable ends of the roof at each end for ventilation and light. The space contains five sets of crushing machines that are spaced equally along the room. The crushing machine system comprises timber box framed elevators and return conveyors linked to the five Bradley and Craven pan mills (dating from the 1920s and 30s) and to the five Monier 'spinners' that replaced the earlier machines in the 1970s. All the machines and associated elements that comprise the five systems remain extant. The process produced a large quantity of dust, hence the name of the dustroom.

⁸² Ibid; undated newspaper article from *Armadale Examiner* provided by K. Coulthard.

⁸³ Meeting with Consultants, Kath Coulthard & Colleen Fancote, Armadale & Districts Brickworks Preservation Group, 15/6/2004; *The West Australian*, 11/11/2002; *Comment News*, 29/10-4/11/2002; *Armadale Examiner*, 21/11/2002.

The adjacent machine shed contains the eight Thos. C. Fawcett brickmaking presses (dating from the 1920s). These are arranged in mirrored pairs in a line parallel to each other along the eastern end of the shed. Each press has an electrical supply adjacent and all originally had timber tool cupboards. Some of the cupboards and other elements are extant while others have been removed in the period since the closure of the plant. Some of the brick presses have had parts removed, possibly to repair working presses prior to the closure. Brass tags identifying the presses remain extant.

Approximately centrally along the row of presses, a steel framed mesh enclosure indicates the former foreman's office. This remains largely as left at the time of closure complete with desk, tools and even a pair of boots. On the wall at the back of the former office some names have been marked on the wall lining.

There is a saw tooth roof with skylights over the section of the machine shed that contains the brick presses. The remainder of the facility previously contained the settling tables, zigzag kilns (not extant) and a toilet and shower block (extant). The facility at the time of inspection contained various stored items relating to brick making but was not in use.

The fabric of the building is in a deteriorated condition. Timber elements are unsafe, showing evidence of termite damage, and brick steps down the bank are deteriorated. The owners have indicated that there may be concern regarding the integrity of the foundations. The catwalks, walkways and staircases providing access throughout the facility have had no maintenance work for many years and are unlikely to meet modern safety standards. There are a number of broken sheets of corrugated asbestos cement and the skylights are broken in some places. The machines remain substantially intact as formerly used but are covered with brick dust.⁸⁴

13.3 COMPARATIVE INFORMATION

Brickworks – Western Australia

The Heritage Council of Western Australia online database lists 13 places using a keyword search for 'brickworks'. Of these, seven are archaeological sites. In relation to the remaining six places, only one place is entered into the State Register of Heritage Places and three, including *Armadale State Brickworks Dustroom & Machinery Shed (fmr)*, are located in Armadale. The other two places in Armadale are associated with Thomas Coombe's 1902 brickworks of which only the quarry face remains extant. A portion of the cableway and headframe have been dismantled and are currently in storage.⁸⁵

Maylands Brickworks (1927 – 1983) has been permanently entered into the State Register. Originally a privately owned business, at the time of its assessment in 1988 only the kiln, drying sheds, the pug mill, and the gate house/changing rooms were still extant. The physical evidence states that the pug mill and intact machinery showed that the brickworks used the wire-cut production technique,

⁸⁴ Additional information relating to the current condition of the place (November 2005) provided by Freehills on behalf of the owners, Australi Brick Compoany Pty Ltd. See letter from Freehills to HCWA of 11 November 2005, on HCWA file P15829.

⁸⁵ HCWA Online Database, www.heritage.wa.gov.au, 26/8/2004; see also HCWA Online Database No. 15743 & No. 4665, 26/8/2004.

unlike the pressed brick process used at Armadale No. 2 Brickworks.⁸⁶ It is not known what company manufactured this plant.

Note: *Old Bristile Kilns*, Belmont, which is also a registered place, has a number of beehive kilns and chimney stacks associated with its use as a pottery works for the production of clay tiles and pipes.⁸⁷

Armadale State Brickworks Dustroom & Machinery Shed (fmr) was one of three brickmaking plants established as part of the State Trading Concerns. The first (No. 1) was Byford in 1913/1914 and No. 2 and No. 3 brickworks at Armadale were established in 1949-1953. In 2007, only No. 2 Brickworks is still extant.⁸⁸

Brickworks - Australia

Australia-wide, there are a number of former brickworks that have been identified either on the Register of the National Estate (RNE), on various State Registers, or on local government inventories.

The RNE online database lists eight brickworks, including *Maylands Brickworks* and two places now demolished. The Hoffman Brick & Pottery Works in Brunswick, Victoria, the Pindi Pindi Brickworks in Mackay, Queensland, and the Yarralumla Brickworks in the ACT are the most substantial and intact; however, the Yarralumla Brickworks has been stripped of manufacturing machinery.⁸⁹

The description of the Hoffman Brick & Pottery Works (1870 – 1969) states that the place still contains nine brick presses; six designed on the Bradley and Craven model, two Anderson presses and one Austral Otis machine.⁹⁰ At Pindi Pindi, all that remains is one of the original 1933 brick pans and presses, which was manufactured by the Fowlers company.⁹¹

Of the searches of the State Registers, only the NSW State Heritage Register and the Heritage Victoria Heritage Register and Inventory showed other listings associated with brickworks. Of the nine records on the NSW database, two were archaeological sites and six made no specific mention of any surviving machinery.⁹² The NSW database states that Austral Brickworks in Brookvale, Warringah still retains a number of brick presses. The brickworks was established in 1914 and the only information found in relation to the machinery is that there were several Foster brick presses.⁹³ It is worth noting that Brian Nolan of Astral Bricks informed the consultants that the Fawcett machines at Armadale were the only ones held by the company.⁹⁴

Of the records on the Victorian database, nine were on the State Register including the Hoffman Brick & Pottery Works discussed above. Also of interest is

⁸⁶ Information about Maylands Brickworks from HCWA Online Database No. 2410; Maylands Brickworks, HCWA assessment documentation, 2/9/1998.

⁸⁷ K. Bizzaca & K. Edwards, *Old Bristile Kilns*, HWA Assessment documentation, February 1999.

⁸⁸ See 'Documentary Evidence' section for main references; &, HCWA Online Database, 26/8/2004.

⁸⁹ Australian Heritage Online Database, 26/8/2004; Yarralumla Brickworks Place Details, Australian Heritage Online Database, 26/8/2004.

⁹⁰ Hoffman Brick & Pottery Works Place Details, Australian Heritage Online Database, 26/8/2004.

⁹¹ Pindi Pindi Brickworks Place Details, Australian Heritage Online Database, 26/8/2004; QLD Heritage Listed Places, www.env.qld.gov.au, 26/8/2004.

⁹² NSW State Heritage Inventory, www.heritage.nsw.gov.au, 26/8/2004.

⁹³ www.warringah.nsw.gov.au/pdf/2002030565a.pdf, 26/8/2004.

⁹⁴ Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks

the Former Standard Brickworks in Box Hill, which used Hoffman based brickmaking techniques and plant.⁹⁵

While undertaking these searches it is interesting to note that there was only one other record of a state brickworks found in other databases. This State Brickworks was part of the government coalmine, which operated at Wonthaggi on the Bass Coast, Victoria from 1909 to 1968. The brickworks opened in 1910 and produced bricks for various public buildings including the local post office. It only operated for three to four years apparently closing due to pressure from private brickmaking companies. No brick machinery dates from this time.⁹⁶

Thos. C. Fawcett Ltd

This firm has strong historic associations with the development of industry in Leeds. Leeds became a major centre in England for the textile and clothing industries by the late eighteenth century. Rapid industrial expansion in the nineteenth century saw the mechanization of textile and clothing amongst others which in turn led to increasing interest and demand for engineering equipment and plant. Engineering became a major business in the city and by 1861 was the second largest employer. By 1900, it had become biggest industry and its product was exported throughout England and internationally.⁹⁷

Thos. C. Fawcett Ltd was originally established in 1861 in Burmantofts, England. In c. 1886, Fawcett purchased a cloth factory in Leeds, which he continued to operate utilising machines of his own design in the manufacturing process. A portion of the site accommodated his Whitehouse Engineering Works and it was here where plant was designed, improved and produced.⁹⁸

An 1888 description of the Fawcett Company states that brick making machinery was its 'leading specialty' and 'in this Mr. Fawcett has patented some of the most important and successful inventions of the day'.⁹⁹ The article goes on to list nine of these machines including the Fawcett's Patent Double Brick Making Machine, Fawcett's Patent Vertical Plastic Pressed Brick Making Machine and Fawcett's Horizontal Plastic Improved Brick Making Machine. As a result of his engineering machinery, Fawcett was the recipient of a number of medals at International Exhibitions including gold medals at Melbourne in 1881 and at Adelaide in 1887.¹⁰⁰

A number of catalogues advertising the Whitehouse Works' brickmaking plant and machinery for semi-plastic, stiff-plastic and wire-cut processes dating from the first half of the nineteenth century survive at the Leeds Local Studies Library and in the archives held by the Armley Mills Leeds Industrial Museum. The catalogues indicate that the firm offered advice as to the machines and processes that would best suit the material used, including demonstrations on

⁹⁵ Victorian Heritage Register and Heritage Inventory, www.heritage.vic.gov.au, 26/8/2004.

⁹⁶ Victorian Heritage Register and Heritage Inventory, www.heritage.vic.gov.au, 26/8/2004; 'Wonthaggi State Coal Mine Historic Reserve – Visitor Guide', n. d., www.gippslandinfo.com.au/Brochures, 26/8/2004.

⁹⁷ Leeds Industry – Heavy Metal, www.leeds.gov.uk/armleymills, 28/7/2004; Discovering Leeds – Industrial Leeds, www.leodis.net/discovery, 21/7/2004.

⁹⁸ *England's Greatest Manufacturing Centres Businessmen and Mercantile Interest, Wealth and Growth, Historical, Statistical and Biographical*, Historical Publishing & Co., England, 1888, Leeds, p. 163, Leeds Local Studies Library; Copy of Thos. C. Fawcett Ltd., Catalogue No. 20, n.d., provided to Kath Coulthard, Armadale Brickworks Preservation Group by the City of Leeds, 20/8/2000.

⁹⁹ *England's Greatest Manufacturing Centres*, op. cit., p. 163.

¹⁰⁰ Ibid.

model plants set up at the Leeds factory, and also supplied plant made to order.¹⁰¹

Through an analysis of the information provided by the consultants and of the drawings of the brickmaking and pressing machines and patent details in catalogues dated 1904 and c. 1920s, Neil Dowlan, Curator (Engineering), Armley Mills Leeds Industrial Museum was able to date the extant Armadale plant to c. 1924/1925.¹⁰² This corresponds with oral evidence indicating that the plant was secondhand and dated from the 1920s.¹⁰³

Dowlan noted the catalogues state the machinery was exported widely. However, the survival rate of the machines appears to be low, even in the United Kingdom. The Armley Mills Leeds Industrial Museum does not have any machines attributed to the Fawcett Company in their collection and there are no extant machines locally. The Museum's records also indicate that within at least the last 10 years it has only been offered the Armadale brickmaking and pressing machines for its collection.¹⁰⁴

On Dowlan's suggestion, the consultants also contacted the following English industrial museums requesting information about the Fawcett machines: the Bedford Museum, Bedfordshire; Somerset Brick & Tile Museum, Bridgewater; Museum of Science and Industry, Manchester; and, the Birmingham ThinkTank. (Dowlan also advised that this may not be of help as each museum tends to focus on regional operations.) At the time this assessment was completed, 28 August 2004, only the Manchester Museum had responded to advise of the existence of Fawcett equipment, in this case a steam boiler at a disused brick factory on Anglesey.¹⁰⁵ Further enquiries may reveal other surviving examples of the company's machinery on an international level.

Conclusion

One of the main aims of this 'Comparative Information' section has been to try to establish the relative rarity or representative value of the Thos. C. Fawcett brickmaking and pressing machines, which has been one of the questions raised in discussions about the cultural heritage significance of the Armadale No. 2 Brickworks.

The above information about brickworks in Western Australia shows that the *Armadale State Brickworks Dustroom & Machinery Shed (fmr)* has rarity value as the only remnant in the State of the State Brickworks industry and for its in-situ brickmaking plant, including the Fawcett machinery. It is also rare anywhere in Australia as an extant State-operated brickworks.

The above information about brickworks in Australia strongly indicates that the Fawcett machinery has rarity value at a national level. Documentary evidence from the eastern states makes specific mention of the fact that there are a

¹⁰¹ Copy of Thos. C. Fawcett Ltd., Catalogue No. 20, n.d., provided to Kath Coulthard, Armadale Brickworks Preservation Group by the City of Leeds, 20/8/2000.

¹⁰² Email correspondence between K. Bizzaca & Neil Dowlan dated 30/7/2004.

¹⁰³ Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.

¹⁰⁴ Email correspondence between K. Bizzaca & Neil Dowlan, Curator (Engineering), Armley Mills Leeds Industrial Museum dated 29/7/2004 & 30/7/2004.

¹⁰⁵ Email correspondence between K. Bizzaca & John Messner, Curator (Industry), Museum of Science & Industry Manchester dated 6/8/2004.

substantial number of the Bradley and Craven machines still existing, primarily because Australian engineering firms copied and produced these models to sell to local industry.¹⁰⁶ In contrast to this, in WA, the State Engineering Works had to produce hand-made moulds and replacements for any parts that needed to be fixed on the Fawcett brickmaking and pressing machines at Armadale.¹⁰⁷

The above information about the Thos. C. Fawcett company and extant machinery produced by the company suggests that there are very few surviving Fawcett brickmaking and pressing equipment (if any) in the main historic industrial centres and collections and possibly in England as a whole. While it is not possible to determine categorically that there are not similar Thos. C. Fawcett machines remaining elsewhere their apparent absence from the major collections, especially in the area of their original design and manufacture, strongly suggests that the examples in Armadale are likely to be rare at an international level.

13. 4 KEY REFERENCES

No key references.

13. 5 FURTHER RESEARCH

Comparative research to date has focused on a survey of readily available material about existing brickmaking machinery within WA, Australia and England. In England, the search has concentrated on the Yorkshire area, which was where the Thos. C. Fawcett company developed and flourished. Material may later come to light which suggests that there are a number of surviving examples of the company's machinery on an international level; however, at this stage, none have been located in some of England's main historic industrial collections.

¹⁰⁶ Hoffman Brick & Pottery Works Place Details, Australian Heritage Online Database, 26/8/2004.

¹⁰⁷ Site Inspection with Consultants, Colin Lock (fmr employee) & Brian Nolan, Austral Bricks, 1/6/2004.