



**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
- 3.10.2 Encouraging women into employment
- 3.13 Developing an Australian manufacturing capacity
- 3.15 Developing economic links outside Australia
- 3.19 Marketing and retailing

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 101 Immigration, emigration & refugees
- 106 Workers
- 309 Technology & technological change
- 310 Manufacturing & processing
- 505 Markets

11.1 AESTHETIC VALUE*

The tunnel kilns at *Australian Fine China, Subiaco* are fine examples of industrial design that have a strong aesthetic appeal, while the more substantial buildings have some aesthetic appeal as simple industrial types. (Criterion 1.2)

The combination of Peppermint Trees and mature plantings leading from *Australian Fine China, Subiaco* to Hay Street have strong aesthetic appeal and contribute to the collective setting of the Subi Centro area and its streetscapes. (Criterion 1.4)

11.2. HISTORIC VALUE

Australian Fine China, Subiaco, a commercial pottery works in continuous operation from the 1920s to 2006, was the longest-lived and last secondary industry in the Subiaco industrial area. (Criterion 2.1)

* 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Canberra, 1991, with additional reference to Richards, O. *Theoretical Framework for Designed Landscapes in WA*, unpublished report, 1997.

The place was the site of production of Wembley Ware, a distinctive line of porcelain often featuring Australian motifs that were popular as decorative genre in the post World War II era, and which was typical of manufacturers attempts to minimize tax obligations at the time by applying ornate designs to ordinary objects. (Criterion 2.2)

In 1921, when Commonwealth and State governments were seeking to establish new industries in Australia, including the manufacture of china for the domestic market, the forerunner of *Australian Fine China*, Calyx Porcelain Company Limited, was established at the place. Government assistance enabled expansion, but the level of indebtedness led to its take over by the State, which leased it out from 1931. During World War II, profitability improved, especially under H.L. Brisbane and Wunderlich Limited (later re-named Bristile Ltd) which leased and expanded it from 1941, then purchased it in 1945. Its subsequent expansion phases, which enabled the company to become one of the foremost porcelain manufacturers in Australia, have taken place in periods of economic development in Australia. (Criterion 2.2)

From 1921, when British pottery workers were brought to Western Australia to establish the industry, through to the present, migrants have been significant in the workforce at the place. Girls and women were among the first workers at the place, their proportionate number in the workforce increasing in the World War II period, and being sustained post-war, the only such division in the parent company. (Criterion 2.2)

Christian Frederick Mouritzen founded the place as the Calyx Porcelain works. H. Lance Brisbane (later Sir Lance) of H.L. Brisbane and Wunderlich Limited, who played a major role in the company's takeover of the porcelain works and its further development to become a major division in the parent company, and a significant role in the development of secondary industry in this State. Well-known architects Forbes and Fitzhardinge were responsible for most of the additions to the place in its post-war expansion period. (Criterion 2.3)

No. 1 and No. 2 tunnel kilns were at the leading edge of technology in the manufacture of pottery in the early 1950s, the No. 1 kiln being the first of its kind to be built in the world. (Criterion 2.4)

11. 3. SCIENTIFIC VALUE

Since 1905, portions of the former University Endowment lands and railway reserve at Subiaco were utilised for secondary industry, including the pottery works of *Australian Fine China, Subiaco*, in continuous operation from 1921, a pattern of land use which ceased when the company relocated. (Criterion 3.2)

No. 1 and No. 2 tunnel kilns at *Australian Fine China, Subiaco* demonstrate technical innovation in the manufacture of pottery in the post World War II period, and their construction was a significant achievement in Western Australia, the No. 1 kiln being the first of its kind to be built in the world. (Criterion 3.3)

11. 4. SOCIAL VALUE

Australian Fine China, Subiaco was the first and/or continuing employer of many migrants, including some initially accommodated at Graylands Migrant Hostel, who value the place for its role in their Australian life. A significant proportion of the workers in the past were women. (Criterion 4.1)

Australian Fine China, Subiaco contributes to the community's sense of place as one of the oldest and largest secondary industries established in Subiaco. (Criterion 4.2)

12. DEGREE OF SIGNIFICANCE

12.1. RARITY

The No. 1 and No. 2 tunnel kilns at *Australian Fine China, Subiaco* were the first such kilns built in Western Australia, No. 1 being the first of commercial overhead oil-burning kilns of post-war design (that subsequently became standard) to be erected in the world. The jaw and secondary crusher made by Foster and Sons of Sydney in the clay storage area is another unusual item. (Criterion 5.1)

Australian Fine China, Subiaco was the oldest commercial pottery in Western Australia operating on its original site for more than 80 years, and was reportedly the only such place in Australia in which the whole process from raw materials to finished product occurred. (Criterion 5.2)

12.2 REPRESENTATIVENESS

The whole complex at *Australian Fine China, Subiaco* is representative of typical factory and support buildings spanning the period from the early inter-war period to the last quarter of the 20th century. (Criterion 6.1)

Australian Fine China, Subiaco is representative of secondary industry in Western Australia and demonstrates a period of commercial pottery production from the early interwar period to the last quarter of the 20th century, the use of migrant workers, and the importance of women in a particular secondary industry. (Criterion 6.2)

12.3 CONDITION

Australian Fine China, Subiaco retains all of its essential elements and sustains all of its heritage values at present.

The continuing development of the industry and its technology has meant that the place has been altered on numerous occasions to accommodate changes to the technology, working environments and occupational health and safety. While plant and equipment have been well maintained, the older buildings are in fair condition. Many of the buildings are clad in asbestos cement, which in the long term presents a building maintenance dilemma.

Since the business's relocation was anticipated, maintenance was kept to a minimum. Most of the landscaped areas were maintained; however, some mature plantings appear to have been neglected.

12.4 INTEGRITY

Australian Fine China, Subiaco retains elements and buildings from its early period of construction to the mid-1980s and reveals elements of its original and present intent, typical of a secondary industry that has remained in a single location over a sustained period.

Given the changing nature of the centre of Subiaco, it is unlikely that all values will be sustained in the long term.

At the time of assessment, the integrity of the place remains high.

12. 5 AUTHENTICITY

Australian Fine China, Subiaco retains elements and buildings from its early period of construction to the mid-1980s, so its fabric and equipment represents parts of all stages of development. As a work in constant change for the main period of construction activity, the place retains a high degree of authenticity.

13. SUPPORTING EVIDENCE

The documentation for this place is based on the heritage assessment completed by Robin Chinnery, Historian and Philip Griffiths, Architect, with amendments by HCWA staff and/or the Register Committee.

13.1 DOCUMENTARY EVIDENCE

Australian Fine China, Subiaco is a manufacturing complex constructed in stages in single and two storey sections constructed of brick and asbestos cement, single-storey toilets and lunch room constructed in stages of brick and tile, a former single-storey laboratory constructed in brick and tile, single-storey canteen (presently the retail shop) constructed in brick and tile, a single-storey office and wholesale showroom constructed in brick and tile, settling dams, and various lightweight single-storey sheds. The site contains all the elements required for the complete production of china from receipt of raw material, to milling, pugging, mould making, production, firing and glazing of flat and hollow chinaware, together with sales, administration and staff support facilities.

In 1904, under the University Endowment Act, 4,000 acres of land was set aside as an endowment for a future university in Western Australia.¹ In 1905, the Municipality of Subiaco purchased 52 acres one rood and 38 perches of these Endowment lands, comprising a portion of Swan Location 2123, 'to the intent that it is held upon trust solely for the purpose of municipal endowment'.² It was bounded by the Old Lime Kilns Road (present day Salvado Road), Atkinson Crescent, Bishop Street, Hay Street and the Perth Fremantle Railway Reserve,³ and thus conveniently located to rail and road transport. About half of this area was set aside by the Municipality to be leased for development of secondary industry.⁴ Mayor Prowse reported 'It is hoped that before long this will be a thriving hive of industry and an important adjunct to the Municipality of Subiaco', and that 'a large firm of engineers' had already leased five acres, where 40 to 50 men were employed.⁵ In the next decade, various firms, including stove manufacturers Metters Limited, took up numerous 99-year leases.⁶

In 1918, the Commonwealth Government authorised the recently formed Institute of Science and Research to undertake research into the value of Australian clays for pottery production. In 1918-20, in Western Australia a special committee, chaired by State Government Mineralogist and Analyst, Dr E.S. Simpson, tested in excess of 170 samples and identified a number of suitable clay deposits for pottery manufacture. Having learnt of confirmation of the suitability of the clays for pottery and paint production, C.F. Mouritzen formed the Mount Kokeby Syndicate, named for the area near Brookton, where a large deposit of kaolin was located on the property of A.H. Thompson, with whom an agreement was to be negotiated to obtain the clay.⁷

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- 1 Ferguson, R. J. *Crawley Campus: The Planning and Architecture of the University Campus of Western Australia* University of Western Australia Press, Nedlands, 1993, p. 1.
 - 2 Certificate of Title Vol. 1093 Fol. 613.
 - 3 *ibid.*
 - 4 Spillman, Ken *Identity Prized: A History of Subiaco* Published for City of Subiaco by UWA Press, Nedlands, 1985, p. 204.
 - 5 Municipality of Subiaco, Mayor's Annual Report, quoted in *ibid.*
 - 6 Certificate of Title Vol. 1093 Fol. 613.
 - 7 Thomson, John D. *Calyx, Wembley Ware and Bristle China* Self-published, with sponsorship of Bristle Limited, Perth; printed by Times Publishing Group, Singapore, 1989, p. 13.

Christian Frederick Mouritzen (b. Copenhagen, Denmark, 1862) had studied architecture in Denmark prior to working in South Africa, and then at Charters Towers, Queensland. Subsequently, after a period at the Croydon Goldfields he came to Western Australia in the wake of the Western Australian gold boom and obtained employment in the Public Works Department as a draughtsman. He rose to become Supervisor of Works and Architect in the Eastern Division before resigning to establish himself in independent practice as an architect. In the pre-World War I period, he became a contractor also, and established business interests in a pastoral property at Burracoppin, the mining industry at Bullfinch, and in the hotel industry, in particular the Perth Hotel.⁸

The Mount Kokeby Syndicate established a plant to manufacture paint, Calyx Paint Works, at East Perth, under the management of chemist A.F. Gourlay. He was well experienced in paint making, and would later takeover this part of the business. An experimental kiln was built, and samples of pottery manufactured there were available for inspection at the Works, as per the prospectus for the Calyx Porcelain and Paint Company Limited. On 10 March 1920, on behalf of the Syndicate, Mouritzen signed an agreement with J.L.B. Weir, who had been appointed Trustee for the Guarantors of the Calyx Porcelain Company Limited, whereby it took over the plans for pottery manufacture in this State. The company's nominal shareholders were Mouritzen, accountant J.L.B. Weir, E.R. Niblett, business manager of Wunderlich Ltd., F. Norman Gibson, warehouseman, and M. Cawcour, solicitor. Mouritzen was managing director and chairman of the board, his fellow directors being Niblett, Weir and A. G. Simpson, of the Union Brewery.⁹ Niblett was a large shareholder in the company, whilst another Wunderlich employee, H. Lance Brisbane, (who would later play a key role in the future of the place), held 250 of the 20,000 shares issued.¹⁰

In late 1920, Mouritzen visited Stoke-on-Trent in England, and Europe, to inspect the manufacturing process and layout etc. of factories and kilns. In early 1921, he returned to WA, having purchased initial machinery at £500, and organised for a group of skilled English workers to come to Western Australia to assist in establishing the pottery industry. Notable among them was W.H. Yates (Senior), manager of Wilson's Pottery Works, Fenton, Stoke-on-Trent, who would become works manager of Calyx Porcelain, and William Brough, from Tams Ltd., Longton, who would be Calyx's first moulder and modeller. Harry Howell, who would serve as artist and decorator for more than 20 years, was also English trained, having completed his apprenticeship at the Copeland (later Spode) factory prior to immigrating to Victoria, from whence he applied for the position.¹¹

In 1921, Mouritzen commenced building the factory on a portion of the land designated for industrial use at Subiaco, and a spur line was constructed from the Perth-Fremantle railway line to bring in the materials necessary for manufacturing pottery. In March, after it became evident that further funds would be required to

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- ⁸ *ibid*, p. 14; and Morison, Margaret Pitt Morison, Margaret Pitt 'Immigrant Architects and Their Work, 1885-1905' typescript in Battye Library.
- ⁹ Thomson, John D. *ibid*, pp. 13-14.
- ¹⁰ Moore, Bryce *From the Ground Up: Bristle, Whittakers and Metro Brick in Western Australia* University of Western Australia Press, Nedlands, 1987, p. 129.
- ¹¹ Thomson, John D. *op. cit.*, pp. 15-17. Note: Brough's daughter, Nellie, a gilder and bander, would also work at the Calyx Works, where she met her future husband, caster Ernie Smith, and their children would also work there prior to serving in World War II. Nellie's younger sister, Nancy, worked there for a period, and her husband, Alan Piercy, was employed there after returning from World War II severely injured. (*ibid*, pp. 15-16; and 'Memories of Mrs. Nellie Smith (nee Brough)', Subiaco Museum.)

finance an increase in the area of the proposed buildings and the purchase of additional machinery, the company applied to the State Government for a loan of £7,500, to be secured by a first mortgage over its assets. The Government's conditions included increasing the authorised capital from £20,000 to £30,000, which was implemented, but rather than delay matters for a further 16 months to issue 5,000 additional shares as also required, the company made alternative financial arrangements to obtain the necessary loan.¹² In total, the shareholders, 'all local businessmen', would expend in excess of £60,000 on machinery, plant, buildings and land, 'in the belief that Australia stood in need of such an industry and would be in a position to support it, by purchasing its out-turn'.¹³

The Calyx Porcelain Company was to manufacture 'domestic chinaware - such as cups, saucers, bowls and the like - and insulators for high tension electric wires', utilising 'excellent raw materials that are available within the State'.¹⁴ With the aim of handling these materials as efficiently as possible, and to ensure the plant was 'erected on the most approved lines, the Company ... brought out ... several expert operatives, who assisted in the establishment of the undertaking'¹⁵ after they arrived in the latter half of 1921.¹⁶ The skilled workers from Stoke-on-Trent would train 'upwards of a hundred men and women, who were engaged locally' so that 'they might form part of an efficient equipment'.¹⁷

In December 1921, Calyx Porcelain Company commenced operations with two intermittent firing, 'bottle' kilns. It was the genesis of one of the largest industries established in the industrial area at Subiaco¹⁸, and would prove to be the longest lived. Establishment of the company's operations excited 'considerable interest' and was viewed as the 'fruition of years of effort' to enable manufacture of domestic tableware in Western Australia.¹⁹ Clay from Mount Kokeby was not used at the porcelain works because 'more suitable clays' for the manufacture of china were discovered at Kunderin, Bolgart and Goomalling.²⁰

In 1922, the Workers' Homes Board built five cottages at Jolimont within easy walking distance of Calyx Porcelain factory for the senior workers.²¹

In August 1922, the company applied to the State Government for a loan of £10,000, 80% to fund 'immediate additions to the Works', and the balance to be available if required, to provide another two kilns and further machinery, to enable the factory to increase its output to 9,500 items per day.²² By this date, the factory employed 70 workers, producing 5,500 items per day. Agencies were already established in South Australia, New South Wales and Victoria, and initial sales had been made to the Melbourne Steamship Company, an order was in hand from Mark Foy of Sydney for 4,350 dozen plates, and large orders were

¹² *ibid.*, pp. 16-17.

¹³ Carcary to Minister for Home and Territories, Melbourne, in Australian Fine China Archives, 1926 (date torn off), p. 1.

¹⁴ Carcary to Minister for Home and Territories, Melbourne, in Australian Fine China Archives, 1926 (date torn off), p. 1.

¹⁵ *ibid.*

¹⁶ Thomson, John D. *op. cit.*

¹⁷ Carcary to Minister for Home and Territories, Melbourne, in Australian Fine China Archives, *op. cit.*

¹⁸ Claremont Nedlands Post, news cutting, in Australian Fine China Archives, n.d., 1988.

¹⁹ Moore, Bryce *From the Ground Up: Bristle, Whittakers and Metro Brick in Western Australia* University of Western Australia Press, Nedlands, 1987, pp. 129-130.

²⁰ Thomson, John D. *op. cit.*, p. 17.

²¹ *Ibid.*; and Thomson, John D. *op. cit.*, p. 15. Note: Three of the cottages (at the west side of Hay Street) survived into the late twentieth century. (*ibid.*)

²² Thomson, John D. *ibid.*, pp. 17-18.

anticipated from shipping companies and the Victorian Railways.²³ In September, after the Council of Industrial Development considered the loan application, it voiced concern as to the company's financial viability, but recommended approval of the loan on the proviso that the company make a further issue of contributing shares to the value of £10,000. In February 1923, the Government approved the conditional loan, but initially the company considered the conditions unacceptable, before accepting the conditional loan in April.²⁴ Made under the provisions of the Industries Assistance Act, 1915, it was secured by a Bill of Sale and Mortgage over the Company's assets.²⁵

An early 1920s photograph shows a bottle kiln under construction, in proximity to existing buildings and two kilns, one of which is a 'bottle' kiln.²⁶ Another early photograph shows the place with the early factory buildings, two 'bottle' kilns, and the brick and tile office building.²⁷

By late 1923, work had commenced on the proposed building extensions to the factory. The quality of Calyx ware had been improved after early problems of excessive crazing were resolved, but it faced heavy competition from cheaper imported chinaware from Japan and England. It was hoped that when the new kilns came into operation the increase in production would lift profitability.²⁸ After it was decided to commence manufacture of electrical insulators, which were being more widely used in Australia, a new building was erected for this purpose, and installation of the necessary machinery began. In April 1924, having been able to raise only £500 of the £4,000 required for this diversification, application was made to the Government for a further loan of £3,500.²⁹ The Council of Industrial Development noted the company was 'insolvent and unless immediate financial assistance is given will have to close down'.³⁰ In May, the loan was approved, with payments to be made in installments.³¹

In mid-1924, the fourth kiln at Calyx Porcelain came into operation, and the first contracts for insulators were supplied from that year. The Australian market for insulators was very large, with Posts and Telegraphs alone requiring more than 3.75 million per annum. As insufficient quantities were available from Australian potteries, some insulators continued to be imported.³² An undated photograph shows 'The Calyx Pottery', Subiaco, following completion of the fourth kiln.³³

Due to competition from similar lines produced at lower cost overseas, particularly Japan, and the Far East, the Calyx Porcelain Company was unable to obtain the market share it had hoped to achieve, and experienced continued financial difficulties.³⁴ In January 1925, its difficulties were compounded when workers went on strike over a wages dispute, closing the factory for nearly a

23 *ibid*, p. 18.

24 *ibid*.

25 Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, p. 1.

26 Photograph reproduced in 'Of earth and fire The H. L. Brisbane and Wunderlich story and annual report 1978 Bristle the 50th Year', 1978, p. 27.

27 Reproduced in Thomson, John D. *op. cit.*, p. 21.

28 Thomson, John D. *op. cit.*, pp. 18-20.

29 Thomson, John D. *op. cit.*

30 Quoted in *ibid*, p. 19, no details.

31 Thomson, John D. *ibid*.

32 *ibid*, p. 20.

33 Cover of a Calyx Pottery Price List, c. 1926, reproduced in Thomson, John D. *op. cit.*, p. 21.

34 Carcary to Minister for Home and Territories, Melbourne, in Australian Fine China Archives, 1926 (date torn off), p. 1.

month. In this period, the Government refused a request for a further loan of £4,000 to provide working capital, and remained steadfast when the request was differently designated and reduced to £2,500. In March, despite making a call of 1s 6d on its shares, the company was unable to pay an account of £21 17s 3d for insurance. By May, accounts outstanding amounted to £96 7s 3d, and the Government commissioned a financial report on the company by C.A. Thorneycroft of the Receiver's Office, which was 'scathing in its criticism of the management ... its bookkeeping procedures and its lack of fundamental business knowledge', and particularly its lack of 'any organised selling plan'.³⁵ Application was made to the Court for the Company to be wound up, as it was 'unable to carry on its business with success and pay its debts, or meet its obligations to the Treasury'.³⁶ On 1 December 1925, William A. Carcary was appointed Provisional Official Liquidator of the Calyx Porcelain Company. He requested the Company Secretary to supply him with the various records of the Company from its inception, including a list of the Judgments which had been made against it.³⁷ Arrangements were made to carry on the works, and Carcary emphasised 'the greatest care must be taken in segregating the stocks claimed by Mr. Weir, and any other stocks belonging to the Company'.³⁸

On 26 March 1926, Carcary was appointed as Receiver, 'for and on behalf of the Government', and it was arranged that advances would be made from the General Loan Fund to enable continuation of the company's operations under his receivership.³⁹ Carcary sought assistance from the Federal Minister for Home and Territories, outlining the history of the Company, whose works 'I understand are the only ones of their kind in the Commonwealth', and the difficulties faced in competing with cheaper imported products.⁴⁰ The State Government had already advanced £15,000 'in the hope that this sum would be sufficient to set the works upon a sound footing', but 'it seems certain that three times that sum would not in actual fact remedy the position', because so long as such competition continued the Company's produce 'must be sold at a loss'.⁴¹ He requested consideration be given to the introduction of tariff protection for 'this infant and struggling industry', whereby 'the company might yet be resuscitated, and enlarged sufficiently to supply most of Australia's requirements' in domestic chinaware, which would ensure the continued employment of the trained workers and increase employment opportunities.⁴² He sought similar protection for insulators, noting 'no better article is manufactured anywhere in Australia than has been made by the Company from local clays'.⁴³

In the late 1920s, the Company continued to trade in liquidation,⁴⁴ under Carcary as Receiver.⁴⁵ After the Crown Solicitor obtained 'an order for the foreclosure of

³⁵ Thomson, John D. op. cit., pp. 20-30; quote in *ibid*, no details.

³⁶ Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, p. 1.

³⁷ W.A. Carcary, of C.L. Haines, Wylie & Carcary, to The Secretary, Calyx Porcelain Company Limited, Australian Fine China Archives, 3 December 1925.

³⁸ *ibid*.

³⁹ Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, p. 1.

⁴⁰ Carcary to Minister for Home and Territories, Melbourne, in Australian Fine China Archives, 1926 (date torn off), p. 1.

⁴¹ *ibid*.

⁴² *ibid*.

⁴³ *ibid*.

⁴⁴ Invoices, 1929-30, e.g. Wengers Ltd. Manufacturers of Chemicals, Colours, Glazes, Minerals & Materials, of Etruria, Stoke-on-Trent, England, in Australian Fine China Archives, 10 January 1930.

the Undertaking', transferring the assets covered by the securities to the Treasurer, the State 'became the owner of the Concern' as from 18 August 1931.⁴⁶ Following negotiations carried out through the Council of Industrial Development, the manager, Frank N. Vincent 'entered into possession of the Works' on 24 August, 'and subsequently obtained an option of purchase', at an agreed price of £10,000, with repayments to be at £1,000 per annum, whilst the Treasurer agreed to provide advances to a maximum of £2,000 per annum, repayable with interest over a year.⁴⁷ Vincent would continue as manager until 30 June 1937, but did not exercise the option.⁴⁸

In 1932, a photograph of the pottery works shows two water tanks mounted on high timber stands, some of the factory buildings, including the office, and the upper portion of each of the four bottle kilns in the rear ground.⁴⁹ In 1934, this view was included in the *National Handbook of Australia's Industries*, which reported 'One of the most interesting industries in Perth is that conducted by the Calyx Porcelain Company... manufacturing all classes of Porcelain Cups, Saucers, Plates, Basins, Jugs and Toilet Requisites'.⁵⁰ The company, 'making the best porcelain articles in Australia', had fulfilled 'important orders' from Commonwealth and State governments, and the defence forces, and 'supplies many leading hotels and stores throughout Australia with the whole of their crockery'.⁵¹ Special mention was made of the employment of girls in the Potters' Shop, in particular for finishing off cups and saucers 'because they are lighter fingered than boys or men', and 'A commendable system' to especially train junior workers, so that 'in the near future' the factory would be 'above the need for importing labour'.⁵²

In December 1935, Treasury ceased raising interest on the Loan Fund Advances to Calyx Porcelain Coy. Ltd. 'as there was no prospect of recovering'.⁵³ The State Government continued holding the Calyx works as it was unsuccessful in efforts to attract a buyer. In mid-1937, Vincent retired as manager and G. Blencowe succeeded him. In June, the Treasury 'liquidated the guaranteed overdraft at the National Bank', meeting the payment of £4,3208 from the Consolidated Revenue Fund.⁵⁴

From August 1931 to June 1939, the Company had traded at a loss, before finally trading at a small profit of £129 in 1939-40. However, it was considered that until 1938, when improvements were made to bookkeeping and stock records, the figures did not provide an accurate indication of trading operations.⁵⁵ In mid-1938, H.L. Brisbane and Wunderlich Limited considered taking over Calyx Porcelain's works, which the government was prepared to lease at a peppercorn

45 Invoice from W. A. Carcary, Halvorsen & Co., for period 1 February to 28 February 1930, Australian Fine China Archives, 11 March 1930.

46 Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, p. 1.

47 *ibid.*

48 *ibid.*

49 'The Calyx Porcelain Works, Subiaco, in 1932' reproduced in Moore, Bryce op. cit., p. 129.

50 'Calyx Porcelain Company' in *National Handbook of Australia's Industries* Specialty Press Pty. Ltd., Melbourne, 1934, p. 569.

51 *ibid.*

52 *ibid.*

53 Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, p. 1.

54 *ibid.*, pp. 1-2.

55 *ibid.*, p. 2.

rental, but the matter lapsed after a feasibility report emphasised the difficulties faced with competition from cheaper imports.⁵⁶

In 1937-39, the company lost a number of sales due to its inability to meet orders, 'due principally to the difficulty in obtaining skilled labour, the need for repairs to ovens and the uneconomic firing of them'.⁵⁷ Most of these difficulties were overcome after additional financial assistance from the Government enabled the necessary repairs, and re-organisation, implemented in late 1939, which it was hoped would enable an increase in production of pedestal pans to 4,500 to 5,000 per annum.⁵⁸ In June 1939, the factory work force comprised nine adult males and 12 male juniors, with one female adult and seven female juniors, which increased to 11 male adults and 19 male juniors, with one female adult and seven female juniors by December, after World War II commenced. There was difficulty in retaining skilled workers, and efforts to have a third pan-caster released from military service were unsuccessful.⁵⁹ In the early 1940s, as the war continued, the proportion of women workers at the porcelain works would gradually increase as they came to fill positions traditionally occupied by men,⁶⁰ an increasingly common practice in Australia and elsewhere in this period.

In December 1940, H. Lance Brisbane, of H.L. Brisbane and Wunderlich Limited, held further discussions with Mr A.R.G. Hawke MLA, Minister for Works, as to the possibility of his company taking over management and eventual ownership of the Calyx Porcelain works.⁶¹ Wunderlich Ltd., had been established in Sydney in 1887, by brothers Ernest and Alfred Wunderlich, whose brother, Otto, joined the enterprise in 1900. McLean Bros. and Rigg Limited represented the company in Perth before Wunderlich took over manufacturers Massey and Co. and Splatt, Wall and Co. in 1909. A factory to manufacture architectural metal work, including stamped metal ceilings, was established at Lord Street. During the World War I period, when Marseilles roofing tiles were unavailable, after some experimentation with local clays, Wunderlich Ltd. commenced manufacturing roofing tiles in Western Australia. Other areas were developed also, including wrought and hammered bronze work, and shop fitting. H. Lance Brisbane (later Sir Lance) had established H.L. Brisbane and Company Limited in 1929, when he left Wunderlich Ltd. to take over operation of Western Australian Potteries (est. 1895) at Belmont. In 1935, H.L. Brisbane and Company Limited became a public company. In 1938, Wunderlich Ltd. took up a 38% interest in it and the Western Australian company was re-named H.L. Brisbane and Wunderlich Limited.⁶²

In March 1941, H. Lance Brisbane wrote to A.R.G. Hawke outlining his offer to takeover Calyx Porcelain's works, noting that he considered an opportunity similar to that which had led to the Western Australian tile industry in World War I might occur in relation to the porcelain and pottery industry during World War II.⁶³ His company would 'undertake to keep the factory in first-class condition and maintain the industry', and 'intended to recondition the plant where necessary

⁵⁶ Moore, Bryce op. cit., p. 131.

⁵⁷ Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, p. 3.

⁵⁸ *ibid.*

⁵⁹ *ibid.* Note: For a period, there was only one pan caster with two assistants. By mid-1941, there were once more two pan casters.

⁶⁰ *ibid.*, pp. 3-4.

⁶¹ Moore, Bryce *From the Ground Up: Bristle, Whittakers and Metro Brick in Western Australia* University of Western Australia Press, Nedlands, 1987, p. 129.

⁶² 'Of earth and fire The H. L. Brisbane and Wunderlich story ...' op. cit., pp. 4-8.

⁶³ Moore, Bryce op. cit., p. 131; and Thomson, John D. op. cit., p. 103.

and place the concern on a higher productive basis'.⁶⁴ With Calyx Porcelain's total liability to the State Government amounting to £51,395 the offer was well received.⁶⁵ In April 1941, whilst a 'general improvement' in operations over the preceding 18 months was reported, it was noted 'The plant is now old, and the time may not be far distant when it will be necessary to carry out a programme of replacement'.⁶⁶

In May 1941, agreement was reached for H.L. Brisbane and Wunderlich Limited to take over 'the old Calyx porcelain works',⁶⁷ with a three year lease and an option to purchase, the government having guaranteed to procure all its necessary crockery and porcelain from there.⁶⁸ On 4 June, the public was notified of the takeover, and advised that business would operate under the name of the purchaser, and Blencowe would remain as factory manager.⁶⁹ In the second half of 1941, 'much needed repairs' were carried out.⁷⁰ Subsequently, photographs in the *Industrial Development of Western Australia* show various views of the place and the manufacturing processes, including a portion of the clay mixing plant; 'jollying', the 'commonest procedure ... a modern adaptation of the potter's wheel'; a sagger, packed with plates ready for the kiln; a placer inside the kiln with a sagger upon his head; and three stages of jug production.⁷¹ Two other processes employed were 'by pressure', the clay being 'forced by machine power into a prepared mould'; and a process in which the clay was reduced to liquid then poured 'into specially constructed moulds and allowed to set'.⁷²

In 1942, H.L. Brisbane and Wunderlich Limited won the major contract to manufacture and supply crockery at the Subiaco factory for the Australian Defence Forces, and, under the prevailing wartime restrictions, any surplus output was permitted to be sold in the general market.⁷³ In early 1944, the company's request for an 18 month extension of its option to purchase the works was approved as with more than £30,000 'tied up in materials for munitions contracts' it was unable to fund the purchase at that period.⁷⁴ The porcelain works' annual turnover had increased from £6,700 per annum to £505,000, and the work force had grown to 86, the majority of the new employees being women.⁷⁵ Demand continued to exceed production, with labour and fuel shortages limiting factors.⁷⁶ In the World War II period and post-war, the

64 Correspondence, 24 March 1941, quoted in Thomson, John D. *ibid.*

65 Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, p. 1. Note: The advances made from the General Loan Fund were as follows: to the Company, £13,407; to the Liquidator, £12,135; and £2,129 to F. N. Vincent; whilst Blencowe had advanced £2,194 to the Treasurer. (*ibid.*)

66 Memorandum from Inspecting Accountant to the Under Treasurer, Department of Industrial Development, Australian Fine China Archives, 7 April 1941, 5.

67 Extract from the *West Australian* 22 October 1946, in Australian Fine China Archives.

68 Moore, Bryce *op. cit.*

69 *West Australian* 4 June 1941, quoted in Thomson, John D. *op. cit.*, p. 104. Note: In October, H. L. Brisbane and Wunderlich was granted approval to erect a signboard awning at the place, with the new name. (Building Application, Subiaco Municipality Building Permit Register No. 4, SROWA Cons. 1902 Item 1, 22 October 1941, p. 52)

70 Thomson, John D. *op. cit.*, p. 104.

71 Peterkin, Roy A. *Industrial Development of Western Australia* Government Printer, Perth, 1942, pp. 280-281.

72 *ibid.*, p. 280.

73 'Of earth and fire The H.L. Brisbane and Wunderlich story ...' *op. cit.*, p. 20.

74 Moore, Bryce *op. cit.*, p. 135.

75 *ibid.*

76 Thomson, John D. *op. cit.*, p. 105.

porcelain works was the only division of the company to employ 'significant numbers of women',⁷⁷ which continued into the 21st century.⁷⁸

In 1945, having considered whether the porcelain works were likely to continue to be profitable in peace-time conditions, H.L. Brisbane and Wunderlich Limited decided to exercise its option to purchase, which was completed in November.⁷⁹ Meanwhile, the company secured the lease of Lot 227 and a portion of Lot 228 for a term of 99 years from 1 July 1945.⁸⁰ From mid-1945, as World War II came to an end and the post-war period began, the company embarked on an expansion programme of its various operations, commencing with additions to the porcelain division at Subiaco.⁸¹ In May-August 1945, building permits were granted for an amenities block to be built on part of Lots 227-228 at a cost of £2,250, and for alterations and additions to the factory, to be built on part of Lots 227 and 228, at a cost of £3,400, which were duly carried out as per plans by Hobbs, Forbes & Partners, Eales, Cohen & Fitzhardinge Architects in Association.⁸²

In 1946, P. George Clauson was appointed manager. Under him, the porcelain division would rapidly expand in the post-war period, including production of 'fancyware lines'.⁸³ It is believed that after Clauson suggested expanding the range of kitchen ware with a 'a fancy cruet set', with salt, pepper and mustard containers resting on a leaf, he persuaded Brisbane to allow production of a sample run, wagering that he would sell the items within a specified period.⁸⁴ Clauson won the wager, and thereafter 'had an almost free hand in developing the fancy lines', which were marketed as Wembley Ware.⁸⁵ In the post-war period, when a higher rate of sales tax was levied on purely decorative items, Australian pottery manufacturers availed themselves of the opportunity to apply 'ornate designs... to many common objects to avoid the taxation system'.⁸⁶

Clauson continued as manager until he retired in 1960, and Wembley Ware was produced through to 1961. Each year, 'seconds' of Wembley Ware were offered as prizes by side show stall holders at the Royal Show, who had made their selection of at the factory.⁸⁷ A wide range of Wembley Ware designs was manufactured, including various types of dishes, plates, ash trays, vases, ornaments and novelty ware, many featuring Australian flora, fauna, birds and fish, landscapes, and Aborigines, which were popular decorative genre in the post-war period.⁸⁸ Some of the Wembley Ware designs, e.g. drover and stockman designs, were notable for portraying Aboriginal men in their working life, 'actively contributing to the nation's economy', which 'seems to be unique

77 Moore, Bryce op. cit.

78 Dirk Meier, former sales manager, Australian Fine China, conversations with Robin Chinnery, site visits, September-October 2005

79 Thomson, John D. op. cit., p. 105.

80 Certificate of Title Vol. 1093 Fol. 613, Lease 122/1945, registered 23 August 1945.

81 'Of earth and fire The H. L. Brisbane and Wunderlich story ...' op. cit., p. 27.

82 Building Applications, Subiaco Municipality Building Permit Register No. 4, op. cit., 10 May 1945, p. 62, 17 August 1945, p. 63; and Hobbs, Forbes & Partners Eales, Cohen & Fitzhardinge Architects in Association, Proposed Alterations & Additions to Factory - Subiaco for H. L. Brisbane & Wunderlich Ltd., Sheets 1 & 2, 6 August 1945, in Australian Fine China Archives.

83 Thomson, John D. op. cit., pp. 111-112.

84 *ibid.*

85 *ibid.*, pp. 112-129.

86 Melissa Harpley, co-ordinating curator, 'The Wembley Ware-Excitingly Different', at Art Gallery of WA, 2005-06, quoted in 'Weekly Life' in *Western Suburbs Weekly* 20 September 2005.

87 Dirk Meier, op. cit.; and in *Western Suburbs Weekly* 20 September 2005, p. 3.

88 Thomson, John D. op. cit., pp. 145-157.

amongst Australia's commonly produced pottery in the post-war decade in this less stereotypical approach'.⁸⁹

In April 1946, a building permit was granted for further additions to the factory at a cost of £1,400.⁹⁰ In October 1946, the Minister for Industrial Development, A.R.G. Hawke MLA. officially opened the first section of the new porcelain factory. A 'representative gathering of businessmen and Government officials' who attended 'watched with great interest the processes by which West Australian clay was transformed into cups, saucers, plates and sanitary ware'.⁹¹ H.B. Jackson, chairman of directors, reported the cost of the new buildings and plant 'had reached £25,000', yearly production was 'approaching £100,000', and all materials except 'certain chemicals' were obtained in Western Australia, including clay from Goomalling, 'felspar from Yellowdine and silica from the company's own deposits'.⁹² Noting the 'great strides' made since the 1941 takeover, he drew attention to the company's production and supply of 'hundreds of thousands of dozen plates, cups, saucers and canteen mugs' to the Armed Forces during World War II, and compared its current output of general domestic ware of 7,500 dozen pieces per month with 1,300 dozen pieces per month in mid-1941.⁹³ The number of workers employed had increased from 42 in 1941, to 170. The Company's wares 'Considered to be the best produced in Australia', were exported to all the other Australian States, 'token shipments' had been made to New Zealand, and the current heavy demand in Australia precluded exploitation of the Far Eastern markets at this date.⁹⁴ In his address, Mr Hawke reflected upon the history of the local porcelain industry, noted the Government's role in keeping it 'alive in the hope that sooner or later its valuable possibilities would be realised' and that H.L. Brisbane and Wunderlich Limited had brought it 'to a successful stage of development', and praised 'the high degree of skill applied by the company and its friendly interest in its workers'.⁹⁵ He mentioned the State's difficulties in competing with the Eastern States in regard to secondary industries, noted the 'considerable expansion... taking place' post-war, the current shortage of labour in industries already in operation, and concluded that 'the State could look forward to its industrial future with every confidence', before being presented with a tea set.⁹⁶

In the post-war period, local demand for crockery was high and imports were initially slow to return the Australian market. There were also large government orders to supply migrant hostels established to accommodate Displaced Persons, who were arriving in Australia from Europe in increasing numbers, including Graylands Migrant Hostel. It was a convenient train or bicycle ride from the porcelain works, where many migrants found initial employment.⁹⁷ From the late 1940s, as the sources of immigration came to vary, it was reflected at the factory. As some members of the different influxes moved on to other jobs, either returning to their original professions or trades where possible, or re-training or re-educating to take up more skilled work, more recent migrants took up positions

89 Text at 'The Wembley Ware-Excitingly Different', at Art Gallery of WA, 2005-06.

90 Building Applications, Subiaco Municipality Building Permit Register No. 4, *ibid*, 10 April 1946, p. 67.

91 Extract from the *West Australian* in Australian Fine China Archives, 22 October 1946.

92 *ibid*.

93 *ibid*.

94 *ibid*.

95 *ibid*.

96 *ibid*.

97 Moore, Bryce *op. cit.*, p. 155; and Thomson, John d. *op. cit.*, p. 106.

at the porcelain works. In 2005, more than 20 different nationalities were represented in the work force at the place.⁹⁸

From the 1940s, the company employed a number of returning servicemen at the porcelain works, including some who were disabled, and extended this practice to include other people with physical and/or intellectual handicaps. In general, there were few similar employment opportunities in the wider community at this period, and the company was well ahead of its time in this regard. In 2005, Australian Fine China employed a number of such workers.⁹⁹

In 1947, 'H.L. Brisbane & Wunderlich Ltd.' was among the companies featured in *Western Australia - Industrial Opportunities and Facts*, which reported testing had shown Western Australia's clay deposits 'equal to the best Staffordshire (Eng.) deposits', and thus 'it is not surprising that the resultant pottery has achieved a pre-eminent reputation wherever used'.¹⁰⁰

In 1947, the company's directors realised that if it were to continue producing porcelain in the face of competition from overseas further development of the factory at Subiaco, and installation of the most up-to-date equipment and methods of production was necessary. H. Lance Brisbane, Chairman of Directors, traveled to England and America to inspect leading potteries and discuss the latest technological improvements with engineers, who had been concentrating their efforts upon improving the firing technology in the post-war period. Subsequently, on his recommendation, it was agreed two tunnel kilns would be installed at the factory, and plans and specifications were purchased for a kiln designed by the British Ceramic Service Company Limited. The design, with overhead oil firing, was the latest development in England, and the No. 1 Bricesco oil fired tunnel kiln erected at H.L. Brisbane and Wunderlich Limited's Subiaco premises would be the first of its kind to be built.¹⁰¹ On consideration, it was decided the company's engineers and technical staff had sufficient expertise to erect the new kilns, and that much of the requisite material and plant 'could be manufactured or procured through Australian sources'.¹⁰²

On 30 June 1948, H.L. Brisbane and Wunderlich Limited were granted a building permit to build a canteen building at part Lots 227 and 228, at a cost of £1,800.¹⁰³ Following completion, the building served as the workers' canteen for 50 years.¹⁰⁴ Clauson was a keen gardener, and under his direction a full-time gardener cared for the grounds and developed the area around the office and canteen into a beautiful garden which often won garden competitions.¹⁰⁵ In 2005, remnants of the once well kept ti-tree hedge that lined the entry road survive, together with a number of mature tree plantings, including Norfolk Island pines, palms, and peppermints, in the vicinity of the former office and canteen buildings, the present administration and trade show room building, the laboratory and the settling dams, as well as in the car parking area.¹⁰⁶

98 Dirk Meier, op. cit.

99 ibid.

100 *Western Australia - Industrial Opportunities and Facts* Patersons Printing Press, in collaboration with the Government of Western Australia, Perth, 1947, p. 86.

101 Typewritten notes re opening of new kilns, Australian Fine China Archives, October 1953, pp. 1-2.

102 ibid.

103 Building Applications, Subiaco Municipality Building Permit Register op. cit., 30 June 1948, p. 84.

104 Dirk Meier, conversations with Robin Chinnery, site visits, September-October 2005.

105 ibid.

106 Site visits, Robin Chinnery and Philip Griffiths, September-October 2005.

In early October 1948, a building permit was granted for additions to the factory, to be built by builder R. J. Davis, at Lot 227, Sub. 2123, Price Street, at a cost of £10,000.¹⁰⁷ Architects Forbes and Fitzhardinge designed the late 1940s and early 1950s additions.¹⁰⁸ H.L. Brisbane and Wunderlich's Chief Engineer, Max Pullman, and its Chief Technical Officer, Alex Johnson, the company's first ceramic chemist, were responsible for installation of the kilns. Tradesmen at the Company's other factories produced the special stainless steel air ducts for the kilns, all the subsidiary firebricks and the insulating material as per the rigid specifications. An Australian manufacturer supplied the high-grade refractories of fused alumina and silicon carbide. The only notable equipment imported was 'the special hydraulic car pushers, the oil filtering and pumping equipment and the pyrometer control equipment'.¹⁰⁹

The total cost of the additions to the factory, including buildings and plant exceeded £100,000, with the cost of erection of each kiln, including equipment, being £22,500, and the special cars manufactured in Western Australia cost £10,000. The new tunnel kilns were of the continuous type, i.e. in operation 24 hours per day throughout the year. Each of the 166 ft. long kilns contained 24 cars of ware at all times. After passing through a pre-heating zone, the cars passed through the high temperature zone, with a temperature of 1200 degrees Celsius, then into the last 30 ft of the kiln, comprising the cooling down zone. Each kiln consumed 230 gallons of oil per 24 hours. The operation of the kilns was highly technical, with the atmosphere in each section of the kilns being rigidly controlled. The complete system was entirely automatic, with oil and air to the burners thermostatically controlled from the pyrometers.¹¹⁰

Initially, the new kilns posed technical and production problems, in gearing the manufacturing aspect of mass production, and in fitting the clay body, glaze etc. to the newly introduced method of firing. Whilst the kilns were capable of producing any variety of crockery, H.L. Brisbane and Wunderlich, having determined the necessity to mass-produce one particular line of product to meet Australian demand, decided to concentrate principally on domestic cups and saucers. The output would be 180,000 pieces of general domestic ware per month, including 40,000 domestic cups per week. In addition, the factory produced 800 units of sanitary ware per month, and around 2,500 pieces of decorated ware. The Western Australian market was relatively small, so the Company had developed a considerable market throughout Australia, selling about 60% of its production outside this State. In 1953, the overall value of the production to this State is in the vicinity of £250,00.¹¹¹

In June 1953, a building permit was issued for extensions to be built at Lot 22, Sub. 207, Hay Street, at a cost of £5,000.¹¹² Photographs taken in that year show the interior of various sections of the factory, including women workers

¹⁰⁷ Building Applications, Subiaco Municipality Building Permit Register op. cit., 7 October 1948, p. 85.

¹⁰⁸ Forbes & Fitzhardinge Architects, H. L. Brisbane & Wunderlich Ltd., Proposed additions to factory on Lot 227, 16 July 1948, and 9 May 1950, in Australian Fine China Archives.

¹⁰⁹ Typewritten notes re opening of new kilns, Australian Fine China Archives, October 1953; and *West Australian* 15 October 1953. Note: Johnston was charged with supervising research in all areas of the company, but 'most of his efforts were concentrated in the porcelain division'. (Moore, Bryce, op. cit., p. 156.)

¹¹⁰ Typewritten notes re opening of new kilns *ibid*, pp. 2-3.

¹¹¹ *ibid*, p. 3.

¹¹² *ibid*, 23 June 1953, p. 123.

hand-painting decorative ware and the pottery storage areas.¹¹³ On 14 October 1953, more than 100 guests inspected the new section of H.L. Brisbane and Wunderlich Ltd.'s porcelain factory at Subiaco. The General Manager, Noel Humphries, outlined the background to the most recent expansion and provided details of the development of the new section of the factory, before it was officially opened by the Premier, Mr Hawke, who was presented with the first bone china coffee set produced in Western Australia.¹¹⁴ Bone china would be produced for only a short period, as it proved uneconomical.¹¹⁵

In the post-war period, the company's clay pits at Goomalling continued to supply the clay, and silicon was also supplied from the company's deposits. On completion of the post-war additions, the main components of the Subiaco factory were as follows. The sliphouse, where the launders were located in the first section. The clay, which comprised about 40% of the main body used in the manufacture, was washed separately. The other constituents, comprised of felspar, from Londonderry (out from Kalgoorlie), which was brought by rail to Subiaco, the spur line bringing it directly to the premises; silicon; whiting; barium carbonate and various chemicals, which were 'ground in ball-mills for 100 hours then mixed with the clay in mixing arcs'.¹¹⁶ Water was extracted from the clay by means of a filter press. After the filter press, cakes were put through the pug mill, and the clay was ready for the next stage, i.e. manufacture. At this period, two methods were employed, clay forming by hand and casting. In the potters' shop, where production was largely concentrated on cups, there was the small plant, the semi-automatic cup machine, and the larger plant, formerly for flat ware, which was now utilised for both flat ware and cups. The dryer was heated by infrared lamps and gas. The process was as follows: the cup was formed in plaster moulds, then passed through the initial dryer to release it from the mould, before it was dressed, handled and passed through the dryer in readiness for the kiln.¹¹⁷ Casting, the process used in production of sanitary ware, involved pouring the clay slip into a mould and 'the plaster absorbs the moisture, and after 50 minutes there is sufficient thickness of clay to form the sanitary ware pan', after which the surplus was poured off 'and the mould allowed to stand until the article is formed enough to remove the mould'.¹¹⁸

There were two kinds of decoration: underglazing or overglazing. Especially designed badging was 'mostly underglazed and burnt in the tunnel kiln'.¹¹⁹ After burning in the bisquet and glost tunnel kilns, the decorative ware was decorated and then fired in the electric decorating ovens at a temperature of approximately 900 degrees Celsius. A loaded car would be pushed into the oven whilst one car was outside having burnt ware removed and being reset. A further decorating oven was on order, and installation was expected 'within a few months'.¹²⁰

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- 113 H. L. Brisbane and Wunderlich Limited Factory, Illustrations Ltd., in Battye Library Pictorial Collection, 8292B/27598-18-23.
 - 114 Item in State News, ABC News Service, in Australian Fine China Archives, 14 October 1953; and *West Australian* 15 October 1953.
 - 115 Thomson, John D. op. cit., p. 157.
 - 116 Typewritten notes re Subiaco Factory, in Australian Fine China Archives, c. 1960. (Note: As production figures cited are as in the above references relating to the 1953 opening, it is likely the date of c.1960 is incorrect.) Also see 'H.L. Brisbane & Wunderlich Limited, Pottery Works Subiaco' Typewritten, n.d. Held in Battye Library.
 - 117 Typewritten notes re Subiaco Factory, *ibid.*
 - 118 *ibid.*
 - 119 *ibid.*
 - 120 *ibid.*

In this period, two of the earlier bottle bisquet kilns were in use only for firing sanitary ware, and the two other such kilns were no longer in production. Each of the two tunnel kilns contained 24 full cars, and in the production cycle, in which the overall burning cycle was 48 hours, one car entered the kiln every two hours. A hydraulic pusher propelled the cars through the kilns, and as one car was pushed into the kiln, a full car was removed from the cooling zone. Number one kiln, a bisquet kiln, was the first burn, in which the ware was fired at a temperature of 1200 degrees Celsius. In number two kiln, the glossing or glazing kiln, the ware was fired at the lower temperature of 1040 degrees Celsius. As noted above, both kilns were continuous, operating 24 hours a day throughout the year, and the firing zone refractories were fused alumina and silicon carbide. The kilns were fired by 16 overhead oil burners. As aforementioned, the entire firing process was automatic, being thermostatically controlled by pyrometers. Should the temperature in the kiln drop, additional fuel was automatically supplied to the burners until such time as it regained the necessary heat, when fuel supply would be adjusted to its normal level. After the finished product was removed from the car, it passed through the warehouse, where items were sorted for defects, and finally packed in special cartons ready for shipment. The greatest proportion of the factory's production was transported interstate to every State in Australia.¹²¹

In the early 1950s, post-war immigration and the 'baby boom' saw increased demand for household crockery and also sanitary ware as housing development accelerated after wartime controls on building and building materials were lifted. In the 1950s, a period of economic prosperity fulfilled Subiaco Mayor John Bathgate's 1947 prediction of 'a bright future' for industry in Subiaco, as many of the leaseholders, including H.L. Brisbane and Wunderlich, extended their premises, and the area continued 'to grow in importance in the State's economy'.¹²²

In early April 1954, a building permit was granted to H.L. Brisbane and Wunderlich Limited for extensions to the factory, at Lots 21 and 22, Sub. 207, Hay Street, at a cost of £2,000.¹²³ These lots were leased from Western Australian Government Railways (WAGR).¹²⁴

On 14 October 1954, the official opening of the 'Land of Make Believe' (at the corner of Stirling Highway and Hampden Road, Nedlands) which featured large scale Wembley Ware sculptures, included a party for 70 'spastic children', whose charity was to be the benefit from donations made at this venue.¹²⁵ It was a popular and notable feature until it was demolished in 1966, when the Secondary Teachers' College (now part of the University of Western Australia) was built.¹²⁶

On 30 June 1958, a building permit was granted for additions to the office at Lot 227 at a cost of £2,000.¹²⁷ The work was duly implemented, and included construction of a modern laboratory.¹²⁸

121 *ibid.*

122 Spillman, Ken *op. cit.*, p. 291, and quotation from Mayor Abrahams, 1953, *ibid.*

123 Building Applications, Subiaco Municipality Building Permit Register No. 5, SROWA Cons. 1902 Item 2, 6 April 1954, p. 4.

124 Noted on Bristle Ltd Plan Layout of Factory showing leased land, 30 October 1984, in Australian Fine China Archives.

125 'Of earth and fire The H.L. Brisbane and Wunderlich story ...' *op. cit.*, p. 28.

126 *ibid.*, p. 29.

127 Building Applications, Subiaco Municipality Building Permit Register No. 5 *op. cit.*, 30 June 1958, p. 39.

128 'Of earth and fire The H.L. Brisbane and Wunderlich story ...' *op. cit.*

In late October 1960, approval was granted for extensions to the pottery works at Lot 227 at a cost of £13,000,¹²⁹ which were duly built.

In 1962, a plan shows the area of two acres one rood 263 perches leased to Brisbane and Wunderlich by the WAGR, with a cyclone fence and ti-tree hedge following the road line and grass plots at either side of the bitumen road from Hay Street.¹³⁰ Through the 1960s, the gardens continued to be well maintained.¹³¹

In early April 1963, a building permit was granted for additions to the slip-house at Lot 227 and part Lot 228, to be built by well known builders E. Allwood & Sons at a cost of £13,000.¹³² These major extensions, and upgrading of the factory with the introduction of new plant and machinery in the potters' shop, followed the decision to discontinue production of earthenware goods and to concentrate on the commercial crockery market with fully vitrified hotel ware, and vitreous china sanitary ware.¹³³ Changes were made to the manufacturing process for production of the specialised commercial tableware and new decorating techniques were also introduced. Production of sanitary ware was expanded, with a wider range of design, the introduction of coloured ware, and adoption of 'the "once-firing" technique'.¹³⁴

In 1969, a block plan shows the existing factory area, with a paved area at one side, and a proposed factory extension towards Price Street; the existing offices, canteen, and laboratory, and a proposed extension to one side of the latter building,¹³⁵ which was not implemented.

In 1973, a proposal drawing shows the existing factory layout including the brick and corrugated iron building adjacent to the old potters' shop and the ablution block, the two bottle kilns which were to be removed, the moulding house (later demolished) near the easternmost waste settling dam, the mill house, slip house, clay shed, old potters' shop, potters' shop, and tunnel kilns area, and, near the existing kilns, a proposed extension to accommodate a new kiln.¹³⁶ After a building permit for extensions to the factory at Lot 227, at a cost of \$100,000, was granted in August 1974, the two earlier kilns were demolished, and builder P.J. Gordon built the extension.¹³⁷ This project enabled expansion of the porcelain division and included a 'gas shuttle kiln'.¹³⁸ The factory was one of the first industries in the State to convert to natural gas and one of the largest consumers in the 1970s and 1980s.¹³⁹

In mid-1976, introduction of a new alumina body enabled production of 'a thinner commercial crockery'.¹⁴⁰ In 1978, new machinery was purchased at a cost of

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- 129 Building Applications, Subiaco Municipality Building Permit Register No. 5 op. cit., 25 October 1960, p. 56.
130 H. L. Brisbane and Wunderlich Ltd., Subiaco Potteries, Copy of Land Lease, 11 January 1962, Australian Fine China Archives.
131 Dirk Meier op. cit.
132 Building Applications, Subiaco Municipality Building Permit Register No. 5 op. cit., 11 April 1963, p. 76.
133 'Of earth and fire The H.L. Brisbane and Wunderlich story...' op. cit., p. 21; and Confederation Report, April 1991, p. 7.
134 'Of earth and fire The H.L. Brisbane and Wunderlich story...', *ibid.*
135 H.L. Brisbane & Wunderlich Limited, Block Plan, 12 August 1969, in Australian Fine China Archives.
136 H.L. Brisbane & Wunderlich Ltd., Factory Layout, Subi. Potteries, 14 May 1973, in Australian Fine China Archives.
137 Building Applications, Subiaco Municipality Building Permit Register No. 6 SROWA Cons. 1902 Item 3, 14 August 1974, p. 41.
138 'Of earth and fire The H.L. Brisbane and Wunderlich story ...', op. cit., p. 30.
139 Dirk Meier, conversation with Robin Chinnery and Philip Griffiths, site visit, October 2005.
140 'Of earth and fire The H. L. Brisbane and Wunderlich story ...' op. cit., p. 21.

\$250,000, including an automatic cup-making machine 'to further improve the competitive position' of H.L. Brisbane and Wunderlich's porcelain division.¹⁴¹ There were 165 people employed in this division, and 80% of the company's tableware was sold outside Western Australia, including exports to New Zealand and Papua-New Guinea, and their vitrified hotel ware was 'the biggest-selling single brand' in Australia.¹⁴² In late 1978, the name of the company was changed to Bristile Ltd., the rationale being that the company was 'largely identified with the brand name 'Bristile' under which its roofing tiles were manufactured, and 'because of a desire to shorten and simplify' its name.¹⁴³

From 1 January 1982, the City of Subiaco leased Lot 227 and part of Lot 228 to Bristile Ltd. for a period of 62 years and six months.¹⁴⁴ In February 1982, a block plan of Lot 227 attached to the lease shows the aforementioned brick and corrugated iron building as 'to be demolished'.¹⁴⁵ In March 1982, a plan for a proposed inflammable liquids storage area shows the existing storage area; a previously approved shed and the subject of the present application; a proposed asbestos/steel plaster storage shed; the elevated diesel storage tank; the mill house and a portion of the slip house.¹⁴⁶ These works were duly carried out, as shown on a 1984 plan.¹⁴⁷

In March 1984, Nelson & Smalley, Consulting Chartered Engineers, drew plans for proposed extensions to adjoin the existing pan mould making area and potters' shop, to provide a decorating shop, decal shop, kiln room, colour storage room, two dark rooms, and an artist's room,¹⁴⁸ which were built in the same year.¹⁴⁹

In May 1984, architects Forbes and Fitzhardinge drew plans for an office block to be located near the canteen and laboratory buildings,¹⁵⁰ which was built that year. In October, a plan of the layout of the factory showing the leased land shows the new office/showroom building, canteen, laboratory and waste settling dams at Lot 228; the various factory buildings and functions of each area at this date, the diesel store, flammable liquid store, storage shed, storm water sump, retail shop (accommodated in the earlier office building) and toilet block addition to this 1920s building at Lot 227; and the parking area at Lot 22.¹⁵¹

By 1987, Bristile Ltd. was exporting industrial crockery valued in excess of \$1 million to New Zealand and the South Pacific region. In 1987, Bristile Ltd. exported commercial crockery to a number of countries in the Middle East,

¹⁴¹ H. L. Brisbane and Wunderlich Limited, Directors' Report 50th Year, p. 6.

¹⁴² 'Of earth and fire The H. L. Brisbane and Wunderlich story ...' op. cit., pp. 21-22 and p. 30.

¹⁴³ H. L. Brisbane and Wunderlich Limited, Directors' Report 50th Year, p. 4.

¹⁴⁴ Lease C620474, registered 16 September 1983, in Australian Fine China Archives.

¹⁴⁵ Crossland & Hardey Pty Ltd Consulting Licensed Surveyors Plan showing partial improvements Lot 227 on Plan 2869, 20 February 1982, in Australian Fine China Archives.

¹⁴⁶ Bristile Ltd., Subiaco Pottery, Proposed position for inflammable liquids storage area, 4 March 1982, in Australian Fine China Archives.

¹⁴⁷ Bristile Ltd. Layout of Factory showing leased land, 30 October 1984, in Australian Fine China Archives.

¹⁴⁸ Nelson & Smalley, Proposed Extension at Porcelain Division, Subiaco, at Lot 227, for Bristile Ltd., March 1984, in Australian Fine China Archives.

¹⁴⁹ Bristile Ltd. Layout of Factory showing leased land, 30 October 1984, in Australian Fine China Archives.

¹⁵⁰ Forbes and Fitzhardinge Bristile Ltd., Subiaco, Proposed Office, Block Plan, and Elevations and Details, 10 May 1984, in Australian Fine China Archives.

¹⁵¹ Bristile Ltd. Layout of Factory showing leased land, 30 October 1984, in Australian Fine China Archives.

including Bahrain and Kuwait, and made its first shipment of crockery to Saudi Arabia, a trial order valued at \$10,000, for hospital, hotel and restaurant use.¹⁵²

In 1988, Bristile's 'medium-sized factory' at Subiaco realised a 'huge increase in demand' for its products, which resulted in the employment of an additional 50 workers in the factory, where 27 different nations were represented among the workers.¹⁵³ Producing 6.5 million items annually (75% being sold interstate), it remained the only factory in Australia manufacturing fully vitrified tableware, supplying the hospitality industry, railway and defence establishments throughout Australia. Application had been made to Subiaco Council for permission to include the City's crest on all products, similar to the inclusion of the Stoke-on-Trent crest on china products manufactured there. In this period, the decline in the Australian dollar assisted exports, and encouraged consumers to purchase locally made items. Bristile's export of a trial order of coffee mugs, featuring motifs of Australian fauna, to Japan, was hailed as 'an exciting breakthrough' by divisional manager, Fred Lawton.¹⁵⁴ After an inquiry from a patient, Bruno Bates, as to where he might purchase one after reading the news report, Bristile donated 101 china mugs to patients at the Salvation Army Hospital at Hollywood Village for Christmas.¹⁵⁵

In June 1990, Bristile secured a \$500,00 contract to supply crockery to New Zealand hospitals, universities, schools and defence forces.¹⁵⁶ At this date, the company employed 130 workers at its Subiaco factory, producing around 100,000 items per week. In November 1990, attention was drawn to the company's supply of crockery to the Australian Defence Forces for 45 of the past 50 years, as it was reportedly the only supplier 'capable of meeting the defence standards and the Australian standard'.¹⁵⁷

In 1991, Bristile Fine China celebrated 70 years of operation, and launched its Macquarie collection of crockery, utilising designs by a number of prominent Western Australian artists. The company took pride in its use of 'Australian resources, labour and expertise to produce a distinctly Australian product which can match the best in the world'.¹⁵⁸ To produce 'Ultimate White' and 'Magnolia' china, two basic types of material were used, those for the former being imported, whilst the latter was manufactured from sand from Jandakot, feldspar from Mukinbudin, and clay from Goomalling. A total quality assurance had been introduced and the company was awaiting accreditation to Australian Standard 3902. At this period, about 90% of the company's production was exported to the Eastern States, New Zealand, the South Pacific, the Middle East and Malaysia.¹⁵⁹

In 1991, Bristile Fine China, profitably producing around four million items of china tableware per annum, contributed approximately 15% of Bristile group's \$82 million annual turnover, 'crucial to the parent company', which made a big loss in the second half of 1990.¹⁶⁰ A newspaper report noted that the plant was 'one of the few of its type in the world, where the complete process of raw

152 *West Australian* 8 July 1987, p. 85.

153 *Nedlands Claremont Post*, news cutting, in Australian Fine China Archives, n.d., 1988.

154 *ibid.*

155 *Nedlands Claremont Post*, news cutting, in Australian Fine China Archives, 6 January 1989.

156 *West Australian* 1 June 1990.

157 *Subiaco Post*, news cutting, in Australian Fine China Archives, 20 November 1990.

158 Product manager, David Stanton, quoted in Confederation Report op. cit.

159 *ibid.*

160 *West Australian*, news cutting, 18 April 1991, in

materials in one end and finished products out the other can still be seen',¹⁶¹ which remains true in 2005.¹⁶² Public awareness was low, as most people associated Bristle with clay tiles. It was hoped that a planned change of name, to Australian Fine China, would remedy this situation, provide the company with 'its own identity (with an Australian feel) and improve its image before having a crack at breaking into the domestic market'.¹⁶³ Traditionally, the company had concentrated on commercial tableware, supplying the Australian defence forces, State and Commonwealth authorities, institutions (including hospitals, universities and schools), the hospitality industry, and the defence force in Papua New Guinea. Market research was to be undertaken before the company entered the retailing business to determine the focus. The company continued to obtain clay from Goomalling, silicon from Wangara, feldspar from Mukinbudin, and imported some higher quality clay from the United Kingdom and New Zealand.¹⁶⁴

In 1993, a plan shows the general arrangement of the kiln area, the control room and arrangement of turntables, and notes changes implemented, including removal of a column and re-location of stairs.¹⁶⁵

In the early 1990s, as part of the 'Subiaco 2000 Scheme', Cabinet agreed to the sale of land previously set aside for 'Railway' purposes, and numerous of the former lessees purchased the former leases. Following Proclamation of the Subiaco Redevelopment Act, 1994, the Subiaco Redevelopment Authority was created. The remaining former Westrail leases were recorded on Title prior to the land being transferred to the Authority,¹⁶⁶ which would oversee re-development of the industrial area as Subi Centro. On 27 September 1996 the Endowment Land was discharged under the Reserves Act (1992).¹⁶⁷

In 1998, the workers' canteen building at *Australian Fine China, Subiaco* was renovated and converted to a new use, namely to serve as the China Shop. On 29 July, it was officially opened by the Premier, Richard Court, MLA, who also launched the Australian Heritage Rose Collection, illustrated by well known, award winning Western Australian botanical artist Philippa Nikulinsky.¹⁶⁸

In spring 1998, an exhibition at Subiaco Museum, entitled 'A Snapshot of Subiaco Industry', examined the variety of industries which had operated in Subiaco and the recent changes in the City as the Subi Centro project developed. An historic photograph showed workers at H.L. Brisbane and Wunderlich's factory.¹⁶⁹

In May 2000, a new kiln, operating at a lower temperature, thereby ensuring a brighter red rather than being 'cooked brown' as in the older, larger kilns, was installed at *Australian Fine China, Subiaco*.¹⁷⁰ The new kiln, a four tonne steel box, locally designed and manufactured of Australian steel, was intended as a

161 *ibid.*

162 Dirk Meier op. cit.

163 *West Australian*, news cutting, 18 April 1991, in Australian Fine China Archives.

164 *ibid.*

165 General Furnace Construction Pty Ltd, General Arrangement Australian Fine China - 2x5 car shuttle kilns, 6 April 1993, in Australian Fine China Archives.

166 Correspondence 'Disposal of the balance of Swan Location 11526 - former Railway Reserve 8888 - Subiaco', 19 January 1995, in Australian Fine China Archives.

167 *Reserves Act 1992* (No. 52) (WA), pp1172-3.

168 Invitation, in Australian Fine China Archives, July 1998.

169 'Subiaco Museum News' in *Talk about Subiaco* Issue No. 20, Sept./Oct. 1998, p. 8, in Australian Fine China Archives.

170 *Subiaco Post* 27 May 2000.

prototype, 'aimed at the export market'.¹⁷¹ The company employed its initiative in designing, engineering and manufacturing equipment, which potteries in less isolated locations were readily able to purchase.¹⁷²

In 2000, with 44 years remaining on its lease of the Subiaco site, Australian Fine China intended to remain in this location unless outside funding was provided to cover the estimated relocation costs of \$11million. Many potteries had ceased operation in recent years, but the company was trading successfully and widening its operations, including appointment as Australian agent for Villeroy & Boch, whose white plates were being sent to the Subiaco factory for decoration, and importing chinaware from China. With 120 workers producing four million items annually, and a catalogue of 800 items, Australian Fine China could supply a wide range of products for to suit the needs of national and international clients. At this date, 18 million mugs were imported annually and the company aimed to produce 2,000 mugs daily to achieve six per cent of that market.¹⁷³

In 2002-03, Australian Fine China introduced a new bone china range for the hospitality industry, which it manufactured in China, a notable departure from its previous practice. The company also continued working towards realising its ambition 'to service the whole tabletop – not just crockery', which was advanced with its appointment as 'the exclusive importer and distributor of the world renowned Schott Zweisel crystal stemware for the hospitality industry in Australia', effective from 1 October 2004.¹⁷⁴

In 2004, Australian Fine China made the decision to relocate its manufacturing operations from Subiaco to Armadale, where a new purpose designed factory was to be built on a 2.8ha site, 'a completely new manufacturing facility with state of art equipment', capable of producing 5 million items per annum.¹⁷⁵ The company was 'absolutely committed to preserving a significant manufacturing base' in Australia, and it was anticipated production at the new site would commence in August 2005.¹⁷⁶ Subsequent delays resulted in the move being postponed.¹⁷⁷

In September 2005, an aerial photograph shows the various buildings, roadways and landscape elements at *Australian Fine China, Subiaco*.¹⁷⁸

From September 2005 to February 2006, the Art Gallery of Western Australia held 'Wembley Ware: Excitingly Different', the first retrospective exhibition of Wembley Ware, which guest curator, Andrew Nicholls, said 'would pay tribute to a unique chapter in the State's industrial history'.¹⁷⁹

Until early 2006, manufacturing continued at *Australian Fine China, Subiaco* in the various buildings designed and built for this purpose. The 1920s office building and 1950s laboratory were unused, but the canteen continued in use as the China Shop. The administration building and showroom also continue in use.

171 ibid.

172 ibid.

173 ibid.

174 *Australian Fine China Bulletin* Issue 8 August 2004, pp. 1-3.

175 *Australian Fine China Bulletin* Issue 8 August 2004, p. 1.

176 ibid.

177 Norman Randall, Australian Fine China, conversation with Robin Chinnery, September 2005.

178 Australian Fine China Archives.

179 'Weekly Life' in *Western Suburbs Weekly* op. cit.

Twenty-four of the original 1950s cars continue in use whilst the remaining 24 have been kept in storage since No. 1 kiln was decommissioned.¹⁸⁰

Australian Fine China officially closed its doors in Subiaco on 30 June 2006, handing the keys and the last plate made at the factory to the Subiaco Redevelopment Authority (SRA). Australian Fine China Chief Executive Officer, Simon Carrel, said: 'Sadly the decision to move Australian Fine China has resulted in the complete cessation of our manufacturing activities in Australia'.¹⁸¹

Subiaco Redevelopment Authority Chief Executive Officer, Tony Morgan, stated that the company's history would be reflected in the redevelopment of the site:

Australian Fine China has contributed to the State's cultural heritage and economy since its establishment, when skilled potters were brought from Stoke-on-Trent, England to Subiaco and we believe that it's imperative that its story is told and remembered.

The SRA will incorporate the AFC's story throughout the redevelopment of the site through public art, architecture and other interpretation techniques.¹⁸²

The SRA also completed a social history film, shot before the factory closed, including interviews with different generations of Australian Fine China staff, footage of the production process and historic images.¹⁸³

13.2 PHYSICAL EVIDENCE

Australian Fine China, Subiaco is a manufacturing complex constructed in stages in single and two storey sections constructed of brick and asbestos cement, single storey toilets and lunch room constructed in stages of brick and tile, a former single storey laboratory constructed in brick and tile, single storey canteen (presently the retail shop) constructed in brick and tile, a single storey office and wholesale showroom constructed in brick and tile, settling dams, and various lightweight single storey sheds. The site contains all the elements required for the complete production of china from receipt of raw material, to milling, pugging, mould making, production, firing and glazing of flat and hollow chinaware, together with sales, administration and staff support facilities.

Australian Fine China, Subiaco is located close to the Subiaco's city centre, on the western edge of Subi Centro. It is set on an irregularly shaped plot of land with frontages to Price Street in the north, and what remains of Hood Street to the south. The major buildings are on the western boundary and close to the northern boundary, with minor buildings located along the eastern boundary. Hood Street and the access road from it are the organizing elements of the remaining open space, with car parks to the south-east and gardens and lawns arranged around the central space between buildings. The buildings are not designed as a complete suite, rather each is a reflection of its function. The setting contains some strong features including a Victorian Ti Tree (*Leptospermum laevigatum*) hedge that lines one side of Hood Street and some mature Peppermint Trees (*Agonis flexuosa*), also on Hood Street. There are some plantings of mature Eucalypts (*Eucalyptus spp.*) and other younger plants that include Palms (various), Jarrah Trees (*Eucalyptus marginata*), Bottlebrush (*Callistemon spp.*), Norfolk Island Pines (*Araucaria heterophylla*), Canary Island Palms (*Phoenix canariensis*), an Olive Tree (*Olea europaea*), Lilly Pilly (*Acmena*

180 Site visits, Robin Chinnery and Philip Griffiths, September-October 2005.

181 www.sra.wa.gov.au (accessed 22 August 2007)

182 *ibid.*

183 *ibid.*

smithii), Rubber Trees (*Ficus spp.*), Cape Lilac (*Melia azedarach*), Agaves, Queensland Box (*Lephostemon conferta*), Cypresses (*Cupressus spp.*), Oleander (*Neirum oleander*), Roses (*Rosea spp.*), Coprosma (*Copromsma repens*), Monstera, (*Monstera deliciosa*) Bamboo, Hibiscus (*Hibiscus rosa-sinensis*), Sword Ferns (*Nephrolepis cordifolia*), and Pelargonium (*Pelergonium spp.*). The gardens are the product of plantings in the early period of development through to the 1960s, when there was a developed garden between buildings 2 and 3 and buildings 4 and 5. The Ti Tree hedge is a long-standing feature. Gardens were modified for the construction of the office and wholesale showroom. Later plantings were designed to provide a setting for buildings or to soften their visual impact rather than to develop gardens as such. Most of the plantings are in fair to good condition, but the Ti Tree hedge has suffered from neglect in recent years.

The description of elements follows the pattern of production and dates where know are given. The numbering system is the one used by *Australian Fine China, Subiaco*. The site is not oriented to cardinal points so for simplicity, Price Street is the assumed north for the purposes of this description. Generally the buildings do not have a particular style and are reflective of requirements of the functions that they house.

Storage Shed (Building 11)

The is a simple skillion roof steel framed and asbestos clad shed, enclosed on three sides and open to the north. It has a concrete floor and was designed for use as a flax store, but is presently used to store bagged imported clays.

Flammable Liquid Store (Building 12) 1982

The is a simple skillion roof steel framed and steel sheet clad shed, enclosed on one side with steel sheet and open to the north, south and east. The eastern side is secured with a link mesh screen and pass gate. The store has a concrete floor and is used for fuel storage.

Plaster Store (Building 13)

A metal framed and clad shed with a concrete floor that is used for the storage of Plaster of Paris which is used for mould modeling (See building 17).

Clay Storage Area (Building 9)

This is a single storey open sided steel framed gable roof building, with an asbestos roof and a skillion roofed section at the western end. It has a concrete floor and its northern wall is the wall of an older building that is now the clay store (former pan moulding area). At the western end there is a disused jaw and secondary edge runner crusher made by Foster and Sons of Sydney. A section of timber cladding survives in this area. The northern wall is brick with timber-framed windows. There is also a conveyor at the southern end to take clay into the washing tanks where impurities are removed in a wet process. Clay settles and impurities can be skimmed off. Material is loose piled Mukinbuden Feldspar and bagged clays on pallets.

Sand Storage Shed (No number located on south end of Mill House 10)

This is a skillion roofed lean-to attached to the south end of the Mill House and is simply a metal framed and clad building with a concrete floor where Silica from Wanneroo is stored in bags on pallets.

Mill House (Building 10)

This is a single storey double volume space framed with steel and clad with asbestos cement and has fixed wired glass glazed windows. The building has a gabled roof also clad with asbestos and a rolled ventilated ridge piece. The building has a concrete ground floor and a steel checker plate first floor. The mill comprises edge roller and vibro energy mills on the upper floor level to grind raw material to the correct consistency and to re-mill off cut material waste from later stages of production. Milled product is stored in cylindrical tanks at ground floor level. Material is milled until the correct consistency is achieved and periodic testing is carried out to ensure that the required quality is reached.

Slip House (Building 16) 1945

This is a steel framed building with a saw toothed asbestos clad roof, wire glass south lights and a concrete floor. The walls are made from a variety of materials including clay bricks, concrete blocks and framed walling. It has a concrete floor and the space contains two hydraulic filter presses that press the place and force out water leaving clean sheets of clay with a moisture content of 20% ready for working. The machinery is from The Maker Engineering Company, Stoke on Trent. The clay is removed in thick sheets and is shrink-wrapped ready for temporary storage in the adjacent area (Room 8). At the northern end of the same space there are three glaze ball mills that are used for milling glaze material. The ball mills were manufactured by Service Engineers, Stoke on Trent. Against the eastern wall there is a sieve machine.

Former Pan Mold Making Area and Old Potter's Shop (Building 8)

This is a brick construction building with an asbestos cement roof and timber framed windows. A good portion of it has been lined with corrugated iron and a suspended ceiling to control air movement. The space has humidified air conditioning that is used periodically to maintain climate control. The floors are concrete and the room contains low steel framed racks onto which milled clay is loaded for short-term storage. Other sections of the shop have been adapted to locate glazing kilns that are described later in the description to maintain sequence.

Flatware Mould Making Area (Building 17)

The mould making area is located to the north of the Mill House, on the boundary of the adjoining lot. It is a long narrow rectangular plan with English garden wall bond brick walls, a near flat metal deck roof, painted brick internal walls, a concrete floor and unlined soffit. The room is divided into two major parts, the work area and the mould store. The master mould maker is located at the southern end of the building, with workbenches for mould makers arranged along the western wall. The space is lit by skylights and fluorescent lighting and cooled by soffit mounted sweep fans. Moulds are shape in Plaster of Paris in this area and the final male and female moulds made up in a strong plastic product. The northern end of the building is part of the same space, but remains unpainted and is fitted out with steel racking for storage of the completed moulds or patterns. The room contains patterns that stretch back over much of the history of production.

Potter's Shop (Building 19)

This area is part of a series of interlinked structures. It has face brick external walls, a steel structural frame, a south light saw toothed roof clad with asbestos and wired glass and a concrete floor. The northern end of the building has an undercroft that is used for storage.

The potter's shop area contains a number of processes including pugging clay and extruding it for flatware production, shaping flatware, simple hollow ware making, handle making, rotary and overhead drying, and assembly and stacking on flatbed kiln cars, ready for firing in the tunnel kiln in the adjacent area (Building 22).

At the southern end of the space, there is a pair of Netzch pugging mills that take clay from the adjacent store and process the clays in to a thoroughly mixed consistency, producing extruded rods of clay for production. The outlets of the mill are adjusted to suit the product being made, with small diameters for cups and small plates and larger diameters for dinner plates and the like. The extruded product is forced through the gauged openings at the northern end of the mill and is laid on flat bed trolleys. The clay is docked to length, racked and wrapped in plastic to maintain moisture content and workability.

To the north there are large rotary driers and there is a plate making area. Clay rolls from the pugging mill are laid on profiled bench that keep the cylinder in place. At the cutting end of the bench there is a piano wire clay cutter that docks pieces of clay to the required thickness for plate making. The clay is pressed over a mould with the face side down on a shaping table, then both mould and clay are machined to achieve the required back profile. Shaping complete, the item is placed in an overhead rapid dryer. In the rapid dryer the moisture content reduces, the product shrinks and is released from its mould.

Product is then sponged and placed in the rotary dryers adjacent to the rapid overhead dryers, then stacked for firing in the No. 2 tunnel kiln.

Further north there is a long Netzch cup-making machine that produces two cup shapes in large quantities. It produces cups and handles are made separately in two part moulds with liquid clay or slip. The machine turns out too few shapes in too large a quantity for regular production, and smaller hollow ware machines are used to the north and west of this large machine. In the same area handles are made in two part moulds, dried, seams timed, and glued to cups, while the clay is leather hard. Once assembled, seams are removed and quality checks, products are sponged and then rapid dried and stacked ready for transport to the kiln storage and car loading area.

Pan Shop fmr. (Building 20) 1945

This part of the complex is the same construction as the adjacent building 19 previously described. The area is used for the production of cast ware or slipware, which is essentially a technique that allows more complex shapes to be made. On the eastern side of the space there are stacks of three part moulds. The casting is done on the western side of the space, where three part moulds are fully filled with slip or liquid clay. The filled mould is set on a conveyor that runs to the south of the space and during the travel distance the outside face of the moulded item solidifies. The time spent in this process is designed to ensure that the desired wall thickness is developed and at the end of the conveyor, residual excess liquid clay is tipped into a large round bath by inverting the moulds and placing them on rotating racks over the baths. Excess liquid clay is re-processed and used again. The drained item remains in its three-part mould and is placed in an overhead rapid dryer located to the west of the conveyor to achieve leather hardness. Following removal from the dryer, the moulds are split and the items removed, and a second drying process takes place in an overhead rapid dryer after seams have been removed. The items are then washed and

cleaned out or sponged and then fired to bisquet. Unlike simple shapes such as cups, these items are cast complete with handles and other features.

At the northern end of the shop there is a small plate making plant which is a duplicate process of the plant previously described and designed to make plates of 250mm diameter and less. Unlike most of this part of the factory, the walls and soffit are lined. Towards the eastern side of the space, which is lit by external windows, the kiln cars are loaded. The cars travel on a light rail system with transfer track running laterally across lines. The cars run on cast wheels with a steel carriage and refractory brick platforms.

Tunnel Kilns (Building 22) 1950

This section of the building is similar to the other parts of the saw toothed roofed areas, but sits on a suspended concrete slab with storage and the engineers' workshop located under it. The tunnel kilns comprised the No. 1 biscuit kiln, now no longer in use and the No. 2 Glost Kiln, which remains in use. The kilns are organized on the long axis east-west, with track running to, through, and from them. The kilns are arranged in three parts with a warming section, the gas fired kiln section, and cooling section. The biscuit kiln is used for spare materials to service the glost kiln. The kilns are constructed in English bond brickwork with refractory brick linings, car rails and guide rails attached to the walls. They are bound with steel columns and strapping and have access ways constructed in steel to service them. Kiln walls are five bricks thick. The mid section where the firing takes place has extra wall thickness and the gas is let into the kilns via ports at intervals along the side of the firing section. Both ends of the kilns are enclosed by pairs of steel doors. There are car tracks down the sides of the kilns for retuning cars to the loading positions at the western end of the space. The kiln fires at 1020 degrees centigrade. The kilns were designed to take 24 cars and are designed to operate on a car in and car out basis as a continuous process.

At the eastern end of the kiln, cars are unloaded and product is checked for imperfections such as distortion, cracks, iron blemishes and the like before going on to be glazed.

The glazing process runs in the reverse direction to the kilns and checked product is back stamped with its brand, mechanically dipped into dyed glaze that is coloured to allow coverage to be checked. The glaze becomes transparent on firing. Glazed products return to this area to have their bottom rims (where glazing does not occur) to be diamond polished to a smooth finish that is almost indistinguishable from glazing.

Glaze is applied to complex shapes and for coloured product by hand in a spray booth.

Pan Finishing and Shuttle Kiln (Building 21)

This area is the same construction as elsewhere, except that the floor is concrete on fill. The area contains car track and two shuttle kilns, that is kilns that are fully loaded, fired and then unloaded, rather than a continuous process like the tunnel kiln.

In this area plates covered in glaze are set on setter trays and then stacked, taken by car and stacked into the kilns. The whole northern end of the kiln lifts in an upward action making the full area of the kiln to be stacked out. The kilns take five cars each. When stacked, the kiln door is brought down, locked and then the glaze firing commences.

Hollow ware is bathed in glaze, then the foot is wiped before being put in trays.

Once fired, product is checked and then taken off to the east of the kiln area for packing in cardboard boxes and these are then taken to areas 23 and 24, beyond the 'iron curtain' and wire mesh gate that separates production from sorting and dispatch.

Sorting and Despatch (Buildings 23 and 24)

This is a two storey section of building, with a brick eastern wall, framed and clad southern and upper floor north wall, with a brick lower wall, saw toothed roof and timber suspended floor. There is an industrial lift linking floors and a metal stair. On the upper floor there is a dispatch office and open floor areas for sorting and packing, with the northern area set aside for small orders. The lower which is enclosed with brick walls and has steel framed windows is fitted out for filling special orders and storing them for dispatch. To the north and west the suspended floors are concrete on concrete columns and beams. The lower level spaces stretch the length of the building and include the engineer's shop and storage for kiln furniture. Oil tanks for kiln firing once stood between the building and road. Only the concrete aprons and loading docks remain as evidence of this phase of history.

To the east of building 23 and 24 lies the settling ponds where water is recycled and solids are settled out.

Decorating Shop (Building 18) 1984

The decorating shop is a brick construction building with aluminium windows and a flat metal deck roof. It is fully lined out with suspended ceilings and a concrete floor. The shop comprises workstations and a long bench onto which decorated product is placed ready to be taken for firing. In this sections transfers are applied and later fired to fuse the pattern with the glaze. Special run decorative treatments, including gold trim is carried out in this area also. There a kiln for firing transfer patterns by fusion firing made by Drayton, and two low temperature kilns for firing gold decoration for on glaze firing made by General Furnace Construction. In the latter case, the furnace is opened by winching off the whole of the furnace top, then the floor is loaded and the top lowered for firing.

All of the buildings in the industrial group are constructed of a variety of materials, including asbestos cement for part or all of their roof cladding, and some of their wall construction. The buildings have been maintained at the level required to allow production to continue efficiently. Most of the buildings are in fair condition.

The remaining buildings in the group are support facilities of various types and include offices and wholesale sales office (Building 1), a former laboratory (Building 5), former canteen that is now used for retail sales (Building 4) Toilet Block (Building 3) and lunch room (former office and shop), together with a transformer (Building 6) and switch room (Building 7).

Former laboratory (Building 5) 1958

The laboratory is a small brick and tiled building with timber boarded gables, steel windows and a small entrance awning on the east side. It has a timber floor, plastered walls and a plasterboard ceiling. It has benches and shelves and a fume cupboard, which remains in occasional use by the decorative glaze workers. The building is domestic in scale and uses the style language that was employed in simple residences of the time. The building is little used and not maintained to the same standard as its neighbours and is in fair condition.

Retail Sales (Building 4) 1948

This was previously the staff canteen and is made of the same material as the adjoining laboratory in the same utilitarian domestic style, but has timber joinery and a substantial portico that is now partly infilled. The interior has exposed timber trusses, painted face brick piers and rendered panels between the piers, and a fireplace on the eastern wall. The place is fitted with display shelves and the former canteen kitchen is screened from the sales space by partitions. The building is well maintained and is in good condition.

Administration and Wholesale Sales Office (Building 1) 1984

This is the newest building on the site and is a simple building with face brick external walls, aluminium framed windows, and a tiled hipped roof with wide eaves. It has a concrete floor, plastered walls and plasterboard ceiling. The administration functions are located at the north portion of the building in partitioned spaces and the sales area is located at the south end of the building. Like its earlier neighbours (Buildings 4 and 5), this building also employs the language of domestic architecture. The building is comparatively new and is in good condition.

Toilet Block and Lunch Room (Building 3) 1920s

This is a building constructed in two stages that has served several uses, including office, retail shop and lunchroom as well as the toilet facilities. The building is in fair condition. The building retains a pressed metal ceiling, safe, and pay window from the original 1920s period of construction.

Transformer (Building 6) and Switch Room (Building 7)

The transformer is a part brick and part wire mesh enclosed compound and the switch room is a flat roofed brick construction element with a small window and flush door. These elements are in fair condition.

13.3 COMPARATIVE INFORMATION

The pottery works now known as *Australian Fine China, Subiaco* has employed girls and women, returned servicemen, and people with disabilities throughout most of its history, including the inter-war and post-war periods when employment of girls and women and people with disabilities was an uncommon practice in industry. Girls and women were initially employed in particular aspects of the manufacture which were generally filled by female employees in this industry in Britain, where most of earliest workers had been trained and worked prior to accepting the offer of positions in the fledgling industry in Western Australia. During World War II, the number of girls and women was increased in many work places, but in most industries their numbers proportionate to male workers were not maintained in the post-war period with servicemen returning to civilian life and immigrant workers taking up positions. Whilst considerable numbers of these people have been employed at the pottery works, it is notable that women, including immigrants, have continued to comprise a significant portion of the work force.

Australian Fine China, Subiaco is unique in Western Australia as the only commercial pottery in continuous operation since the early 1920s. It is one of the largest commercial potteries in Australia, and reportedly the only one where the

whole manufacturing process from raw materials to finished product takes place on site. The buildings and equipment have been purpose designed and built to serve the specific purposes required of a manufacturing pottery works.

The No. 1 tunnel kiln (decommissioned) at the place was the first to be built anywhere in the world to this design, and together with the No. 2 tunnel kiln, which continues in operation, is a rare example of industrial heritage.

The buildings are typical of their time for factory construction, with steel framed structures, south lights, and asbestos cement cladding. The buildings that support the manufacturing operation are domestic scale and take their style from residential building types.

The gardens retain elements of the setting created in the 1950s and 1960s, including the Ti Tree hedge and Peppermint Trees on the entrance drive and this element of surviving landscape is considered to be uncommon.

13. 4 KEY REFERENCES

'Calyx Porcelain Company' in *National Handbook of Australia's Industries* Specialty Press Pty. Ltd., Melbourne, 1934

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Thomson, John D. *Calyx, Wembley Ware and Bristile China* Self-published, with sponsorship of Bristile Limited, Perth; printed by Times Publishing Group, Singapore, 1989

13. 5 FURTHER RESEARCH

Further research in additional archives held by the City of Subiaco, Bristile and State Records Office of Western Australia may reveal further information about the place and the pottery industry in Western Australia