

HERITAGE IMPACT STATEMENT
FOR PIPE KILN
AT FORMER BRICKWORKS.

SUTHERLAND YARD,
PUNCHBOWL BRICK & TILE CO. LTD,
PRINCES HIGHWAY, OAK ROAD
& FLORA STREET,
KIRRAWEE, N.S.W.



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Archaeology • History • & Heritage

A.B.N. 79 072 316 968

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For
Henroth Investments Pty Ltd.

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The author would like to thank

Client: Mr. Daniel Maurici and Mr. Garry Brown, Henroth Pty Ltd.

ABBREVIATIONS

Bk	Book
C T	Certificate of Title
DP	Deposited Plan (LTO)
LTO	Land Titles Office
LTOD	Land Titles Office, Deed
ML	Mitchell Library
No	Number
<i>SMH</i>	<i>Sydney Morning Herald</i>
SRNSW	State Records, New South Wales

EXECUTIVE SUMMARY.

The former brickworks at Kirrawee is listed as a heritage item on the Sutherland LEP,¹

The Sutherland Brick Company opened in 1912. It went into liquidation in 1917 and was sold in 1918 to Refractory Bricks Limited. The latter company only produced firebrick.

The brickyard was sold to the Punchbowl Brick & Tile Company in 1927. It became the Sutherland Yard of that company. The new owners extended production into pipes, tiles and pottery.

The most likely date for the construction of Pipe Kilns 3, 4 and 5 is between 1927 and 1930, as shown in the 1930 aerial photograph (Figure 2.5). Pipe Kilns 1 and 2 were constructed between 1951 and 1961.

An assessment report on the former brickworks at Kirrawee was originally prepared in January 2002 for Planning NSW.²

A more detailed assessment report was prepared in October 2007, after the site had been sold to private owners.³

This second assessment report was used to obtain an excavation permit for the excavation of five of the pipe kilns. The excavation permit was approved by the Heritage Branch, Department of Planning, on 21 November 2007 (Application 2007/S140/019).

The purpose of the archaeological excavation was to reveal the surviving condition of Pipe Kilns 1-5. The excavation revealed that the earlier pipe kilns, Pipe Kilns 3-5, are

¹ Information and listing sheets provided by Ms Kylie Fairhall, Sutherland Council.

² Edward Higginbotham & Associates Pty Ltd. Archaeological assessment of former brickworks (Kirrawee Living Centres Project) Princes Highway, Oak Road & Flora Street, Kirrawee, NSW. Planning NSW. 2002.

³ Edward Higginbotham & Associates Pty Ltd. Historical and archaeological assessment of former brickworks, Princes Highway, Oak Road and Flora Street, Kirrawee, NSW. Restifa & Partners Pty Ltd & Kirrawee Centre Pty Ltd. October 2007.

poorly preserved. Pipe Kiln 4 has been totally removed and replaced by a down draught brick kiln. The brick apron around Pipe Kilns 3 and 5 provides an insight into the appearance of the brickyard with pipe kilns surrounded by brick working floors.

Only the later pipe kilns, Pipe Kilns 1 and 2, survive to just below finished floor level, exposing the underfloor flue arrangement. Of these two kilns, Pipe Kiln 1 is the best preserved and clearly demonstrates the workings of a pipe kiln.

The archaeological investigation also revealed other aspects of pipe kiln technology, including the range of bricks and firebricks used, together with fragments of kiln furniture, indicating that the works produced up to 24 inch diameter pipes, usually the largest produced using this technology.⁴

Conservation Options.

A Heritage Impact Statement was prepared in January 2009 for proposed redevelopment.⁵ The report considered three principal options for the conservation of Pipe Kiln 1, together with the conservation of the brick pit itself. Other aspects of brick manufacturing technology were considered to be well preserved on other sites in Sydney. The demolished remains of these other brick kilns were not considered worthy of conservation.

There are three principal options for the conservation of Pipe Kiln 1, the best preserved of the five pipe kilns excavated in January 2008. The three options are summarised as follows:

Option 1. Conservation in situ.

Option 2a. Dismantle and reconstruct in adjacent park, former brick-pit.

Option 2b. Dismantle and reconstruct in part in adjacent retail centre.

Option 3. Interpretation and display alone.

⁴ Edward Higginbotham & Associates Pty Ltd. Report on the archaeological excavation of five Pipe Kilns at Former Brickworks. Sutherland Yard, Punchbowl Brick & Tile Co. Ltd, Princes Highway, Oak Road & Flora Street, Kirrawee, N.S.W. Restifa & Partners Pty Ltd & Kirrawee Centre Pty Ltd. January 2009.

⁵ Edward Higginbotham & Associates Pty Ltd. Heritage Impact Statement. Conservation Options for Pipe Kiln at Former Brickworks. Sutherland Yard, Punchbowl Brick & Tile Co. Ltd, Princes Highway, Oak Road & Flora Street, Kirrawee, N.S.W. Restifa & Partners Pty Ltd & Kirrawee Centre Pty Ltd. January 2009.

Option 1. Conservation in situ and recommendations.

The current development proposal envisaged the careful dismantling of Pipe Kiln 1 and its reconstruction in the adjacent park, part of the former brick pit (Option 2a). This proposal was revised to allow for the conservation of Pipe Kiln 1 in situ, together with the retention of part of the former brick pit (Option 1).

Option 1 complies with the ICOMOS Burra Charter and is the recommended outcome for this site. It ensures that the significance, fabric and authenticity of Pipe Kiln 1 and its setting is retained.

The twin chimneys of the Kirrawee Brickworks were a landmark, until demolished in 1975. The proposed development should respect this former landmark in its design and appearance as a gateway to Sutherland.

The detailed arrangements for conservation, interpretation and display should be prepared in the form of an Interpretation Plan.

An archaeological monitoring programme for the removal of fill layers during redevelopment should be undertaken to recover significant relics for interpretation and display.

Work to conserve Pipe Kiln 1 should be undertaken by persons with the relevant skills and trades, for example, archaeologist, engineer and person with skills in pipe kiln construction and repair.

See Chapter 10 for recommendations in detail.

1 INTRODUCTION.

1.1 Background.

An assessment report on the former brickworks at Kirrawee was originally prepared in January 2002 for Planning NSW.⁶

A more detailed assessment report was prepared in October 2007, after the site had been sold to private owners.⁷ This second assessment report included additional historical research and selective comparative analysis, enabling the significance of the site to be more precisely defined. The report found that other aspects of brick manufacturing technology were well preserved on other sites in Sydney. Therefore the demolished remains of these other brick kilns at Kirrawee were not considered worthy of conservation. This assessment allowed the recommendations for archaeological excavation to be refined, so as to focus on determining the surviving condition of the pipe kilns and their potential for conservation, interpretation and display.

This second assessment report was used to obtain an excavation permit. The excavation permit was approved by the Heritage Branch, Department of Planning, on 21 November 2007 (Application 2007/S140/019).

The excavation of the sites of 5 potential pipe kilns was completed between 15 and 23 January 2008.⁸ As a result of the excavation it was found that only two of the pipe kilns (Pipe Kilns 1 and 2) survived almost to finished floor level. Of these two pipe kilns, Pipe Kiln 1 was best preserved.

As a result of the archaeological excavation, a heritage impact statement was prepared to assess the impact of the proposed development. The interpretation and display

⁶ Edward Higginbotham & Associates Pty Ltd. Archaeological assessment of former brickworks (Kirrawee Living Centres Project) Princes Highway, Oak Road & Flora Street, Kirrawee, NSW. Planning NSW. 2002.

⁷ Edward Higginbotham & Associates Pty Ltd. Historical and archaeological assessment of former brickworks, Princes Highway, Oak Road and Flora Street, Kirrawee, NSW. Restifa & Partners Pty Ltd & Kirrawee Centre Pty Ltd. October 2007.

⁸ Edward Higginbotham & Associates Pty Ltd. Report on the archaeological excavation of five Pipe Kilns at Former Brickworks. Sutherland Yard, Punchbowl Brick & Tile Co. Ltd, Princes Highway, Oak Road & Flora Street, Kirrawee, N.S.W. Restifa & Partners Pty Ltd & Kirrawee Centre Pty Ltd. January 2009.

options for Pipe Kiln 1 and the partial retention of the brick pit became the focus of heritage conservation and management on the site(Figure 1.2).⁹

This revised heritage impact statement was commissioned by Henroth Investments Pty Ltd on 25 August 2010.

1.2 Brief.

The purpose of this report is assess the options for the conservation, interpretation and display of Pipe Kiln 1 and the partial conservation of the brick pit of the former Brickworks at Kirrawee, within the context of the proposed redevelopment of the site.

The client, Henroth Investments Pty Ltd, is seeking approval for the project from the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act, 1979*.

1.3 Location of site.

The study area, namely the former brick pit, is bounded by Princes Highway on the north, Oak Road on the west, Flora Street on the south and by other properties on the east (Figure 1.1). The former brickworks is DP 589977, Lots 1 and 2.

1.4 Heritage Listings.

The former brickworks at Kirrawee is listed as a heritage item on the Sutherland LEP,¹⁰

1.5 Study methodology and limitations.

⁹ Edward Higginbotham & Associates Pty Ltd. Heritage Impact Statement. Conservation Options for Pipe Kiln at Former Brickworks. Sutherland Yard, Punchbowl Brick & Tile Co. Ltd, Princes Highway, Oak Road & Flora Street, Kirrawee, N.S.W. Restifa & Partners Pty Ltd & Kirrawee Centre Pty Ltd. January 2009.

¹⁰ Information and listing sheets provided by Ms Kylie Fairhall, Sutherland Council.

This report has been prepared in accordance with standard guidelines, including:

J. S. Kerr's The Conservation Plan.
The ICOMOS Burra Charter.
Heritage Office and Department of Urban Affairs and Planning. 1996.
Statements of Heritage Impact.
Heritage Office and Department of Urban Affairs and Planning. 1996.
Conservation Management Documents.
Heritage Office and Department of Urban Affairs and Planning. 1996.
NSW Heritage Manual.
Heritage Office and Department of Urban Affairs and Planning. 1996.
Archaeological assessments.
Heritage Office and Department of Urban Affairs and Planning. 1996.
Heritage Assessments.
NSW Heritage Office. 2000. Assessing Heritage Significance. A NSW
Heritage Manual Update.

1.6 Author identification.

This report was prepared by Dr. Edward Higginbotham. Historical research was completed by Terry Kass, historian, and forms Chapter 2 of this report, together with Bibliography and Appendices.

Terry Kass and Edward Higginbotham jointly undertook the research on other pipe kilns in the Sydney Metropolitan Area (Section 4.7).

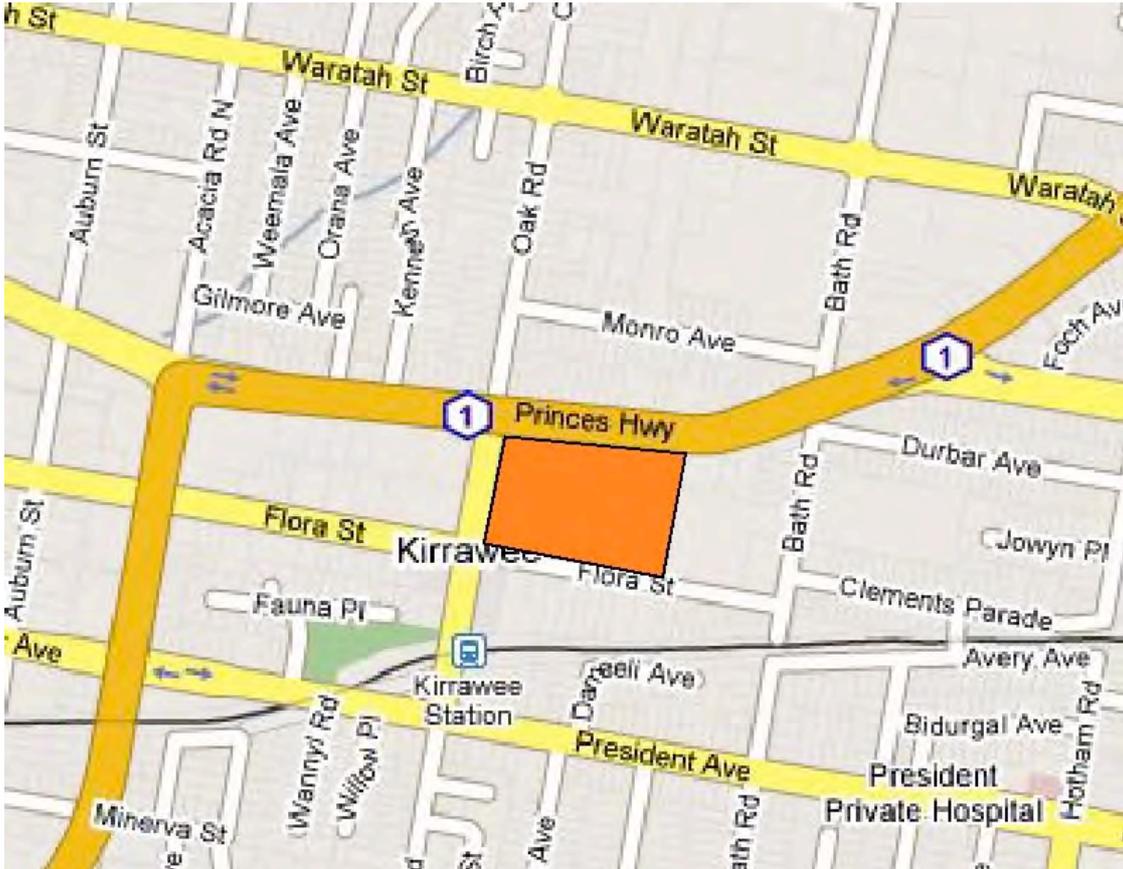


Figure 1.1 Location plan, former brickworks, Kirrawee.
Source. <http://maps.google.com/>

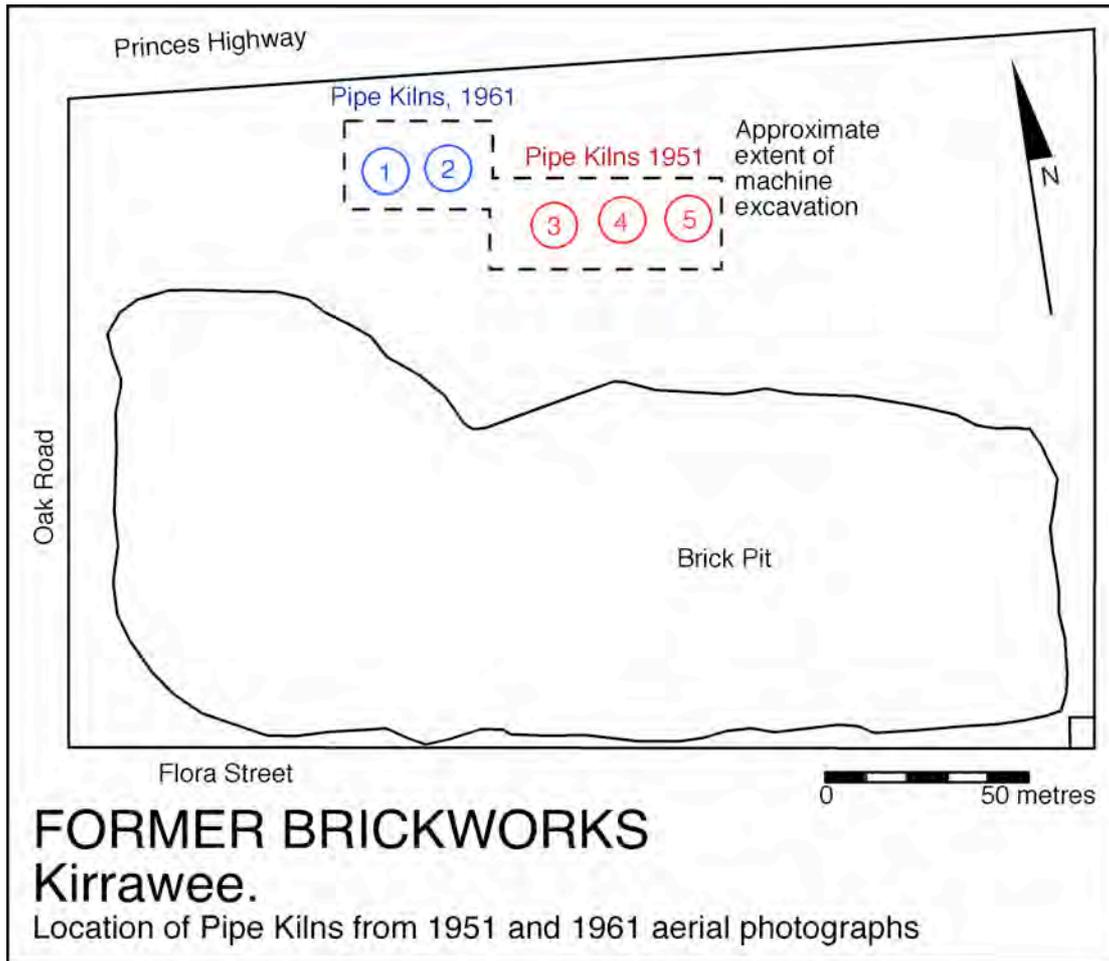


Figure 1.2. Site plan, showing the location of Pipe Kilns 1-5.

**KIRRAWEE BRICK PIT
CONCEPT PLAN
Part 3A Submission**



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Architect
WOODHEAD
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Figure 1.3. Concept Plan for proposed development.
Source. Henroth Investments Pty Ltd.

2 HISTORICAL BACKGROUND.

The following historical background was prepared by Terry Kass, historian.

The study site formed part of the land in the hands of the Holt-Sutherland Estate in the nineteenth century. On 12 December 1881, after part of the Holt-Sutherland Estate was subdivided into allotments of about 5 acres each, it was offered for sale on 99 year leases. Section 6, which forms the study area, was included but ran south as far as Woronora Road so that it was twice its later size. The surveyors were McHarg and Christie (Figure 2.1).¹¹

The same subdivision was offered again on 1 December 1884 with the same layout (Figure 2.2).¹²

Subsequently, on 15 February 1886, the Holt-Sutherland Estate offered the land for sale again with a new layout completed by surveyor Louis A Curtis. In the new layout, the former Section 6 was reduced to half by running Hawthorne Road from east to west across it and making the new section into 17 smaller allotments (Figure 2.3).¹³

Surveyor Louis A Curtis signed the subdivision plan, which became DP 1660 covering that area on 1 March 1886. It was duly filed at the Land Titles Office (Figure 2.4).¹⁴

By 1912, the brickworks was being established on Allotments 4, 5, 13, and 14, Section 6, DP 1660. These became the core area of the brickworks. On 29 April 1912, a Certificate of Title was issued to Peter Esplin, engineer of Newtown, and Peter Cramb, farmer of Grenfell, for allotments 4, 5, 13 and 14, with a total area of four acres one rood and fourteen perches, after they bought them from the Holt-Sutherland Estate Co.¹⁵

¹¹ Sydney Subdivision Plans, Sutherland, ZSP:S18/13

¹² Sydney Subdivision Plans, Sutherland, ZSP:S18/3

¹³ Sydney Subdivision Plans, Sutherland, ZSP:S18/35

¹⁴ DP 1660

¹⁵ C T 2248 f. 169-70

On 23 August 1912, they transferred the land to the Sutherland Brick Co Ltd for £300.¹⁶ The Company Secretary was William Henry Osgood, who was in business as a plumber in two locations on Marrickville Road in Dulwich Hill and Marrickville.¹⁷

Allotment 2, Section 6 was leased by the Holt-Sutherland Company to Henry James and Emeline Richards on 26 August 1914.¹⁸ By 1926, they were shown as conducting a shop on this site.¹⁹ It later became part of the study site.

From 1912 until 1917, the Sutherland Brick Company operated its works at this site.²⁰ By May 1918, the Sutherland Brick Co Ltd was in liquidation and the works was transferred to Refractory Bricks Ltd on 2 May 1918.²¹

In 1923, Allotments 3 and 15 were added to the brickworks site after being transferred by the Holt-Sutherland Estate Co to Refractory Bricks Ltd.²² By December 1926, the Company had erected a weatherboard office with an iron roof on the land.²³

In 1924, William Henry and Frederick Albert Mashman opened up a pottery works on Allotments 9-11, Section 6, but these do not form part of the study site.²⁴ By December 1926, William Henry Mashman and Frederick Albert Mashman, Madeline St, Enfield, were the owners of the adjacent Allotments 9-11. There was an earthenware factory with kilns on that land.²⁵

A small part of Allotment 13, measuring 20 feet by 25 feet at its south-eastern corner, owned by Refractory Bricks Ltd, was transferred to the Sutherland Shire Council on 19 May 1926.²⁶ A new CT was issued to Refractory Bricks Ltd on 21 July 1926 for

¹⁶ C T 2248 f. 169-70; Dealing 677173

¹⁷ Sands, *Directory*, 1912, p 1360

¹⁸ Dealing A129232

¹⁹ Valuer-General, Valuation Rolls, Sutherland Shire, SRNSW 10/12893, Card 8572

²⁰ J Lawrence, *Pictorial History: Sutherland Shire*, Kingsclear, Crows Nest, 1997, p 19

²¹ C T 2295 f 174

²² CT issued on 21 February 1923. C T 3422 f 215

²³ Valuer-General, Valuation Rolls, Sutherland Shire, 1926-49, SRNSW 10/12893, Card 8573

²⁴ C T 3607 f 123-4; Valuer-General, Valuation Rolls, Sutherland Shire, 1926-49, SRNSW 10/12893, Card 7235

²⁵ Valuer-General, Valuation Rolls, Sutherland Shire, SRNSW 10/12893, Cards 7235 & 8575

²⁶ C T 2295 f 174

Allotments 4-5, 14 and part of 13, excluding the small area at its south-eastern corner transferred to Sutherland Shire Council.²⁷

By December 1926, Refractory Bricks Ltd had also leased Allotments 16 and 17, facing Oak Road from the Holt-Sutherland Company. By that time, there was a 3-roomed brick cottage with an iron roof on it.²⁸

Late in 1927, Sands Directory listed Refractory Bricks Ltd – B H McClure, manager, in this position on the Highway.²⁹

On 8 September 1927, Allotments 3, 4, 5, 14, 15 and most of 13 were transferred to the Punchbowl Brick and Tile Co Ltd.³⁰ The improvements on that land included a weatherboard office, 5 kilns, an engine room and a moulding room, 40 feet long.³¹

According to Reginald Allott, managing director of the Punchbowl Brick Company, when they took over the site, the Refractory Brick Ltd only made firebricks. The Punchbowl Brick Company concentrated mainly on making building bricks, but also turned out some firebricks.³²

A series of bank mortgages allowed the company to devote most of its operating capital to running the works rather than to the value of the land. On 31 August 1927, the Punchbowl Brick and Tile Co Ltd mortgaged the brickworks on Allotments 3, 4, 5, 14, 15 and most of Allotment 13 to Refractory Bricks Ltd. That loan was discharged on 2 March 1929.³³ On 17 December 1928, it mortgaged the brickworks on Allotments 3, 4, 5, 14, 15 and most of 13 to the Australian Bank of Commerce Ltd.
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Late in 1928, Sands Directory listed the “Sutherland Brick Pipe & Pottery Works, J M Allen, manager”, in this position.³⁵

²⁷ C T 3893 f 192

²⁸ Valuer-General, Valuation Rolls, Sutherland Shire, SRNSW 10/12889, Card 5738

²⁹ Sands, *Directory*, 1928, p 826

³⁰ C T 3893 f 192; C T 3422 f 215

³¹ Valuer-General, Valuation Rolls, Sutherland Shire, SRNSW 10/12893, Card 8573

³² Premiers Dept, Inquiry into Brick Prices, 1929-30, SRNSW 9/2464, Minutes, 14 Feb 1939, p 554-5

³³ C T 3893 f 192; C T 3422 f 215

³⁴ C T 3893 f 192; C T 3422 f 215

³⁵ Sands, *Directory*, 1929, p 871

Late in 1929, Sands Directory, though correcting the manager's name, still listed the "Sutherland Brick Pipe & Pottery Works, J M Allott, manager", in this position.³⁶ This listing remained the same until Sands ceased publication in 1932-3.

An aerial photo of March 1930 showed at least three kilns and a long building parallel to Princes Highway, possibly a moulding or drying shop, plus associated buildings and sheds (Figure 2.5).³⁷

On 12 November 1930, the Punchbowl Brick and Tile Co Ltd bought the lease of Allotment 2 adjacent with a cottage on it from Henry James Richards. Various changes were made to the cottage over the years (See Appendix 2 - Sutherland Valuation lists).³⁸

The company mortgaged the brickworks on Allotments 3, 4, 5, 14, 15 and most of 13 to the Bank of NSW on 14 July 1933.³⁹ The mortgage of 17 December 1928 to the Australian Bank of Commerce Ltd was discharged on 12 December 1933.⁴⁰

From 1934 onwards, the Sutherland Yard of the Punchbowl Brick and Tile Co Ltd received a better price for its bricks than yards in more central locations, since it was away from the major area of price-cutting between major brickyards.⁴¹

Allotment 1 was added to the site on 18 November 1936, when it was transferred to the Punchbowl Brick and Tile Co. Previous owners had been Johannes Brinkman, musician of Sutherland and his wife Elizabeth from 1919 to December 1930 when it was transferred to Nora Nixon, spinster of Epping, who then transferred it to the

³⁶ Sands, *Directory*, 1930, p 883

³⁷ M W S & D B, *Aerial Mosaic of Sydney & Suburbs*, 1930, No. 23, Georges River, SR Map 32210

³⁸ Dealing, A129232; Valuer-General, Valuation Rolls, Sutherland Shire, SRNSW 10/12893, Card 8572

³⁹ C T 3893 f 192; C T 3422 f 215

⁴⁰ C T 3893 f 192; C T 3422 f 215

⁴¹ 'Report of the Industrial Commission of New South Wales to the Minister in Respect of the Prices of Bricks sold by manufacturers operating and selling in the Metropolitan Area & Suburbs', *NSWPP*, 1938-40, volume VIII, p 552

Company.⁴² Between 1940 and 1943, the Company erected 6 horse pens and shelters on this land.⁴³

In 1937, the railway station "Kirrawee" was erected on the new Sutherland-Cronulla railway line, giving the suburb its present name. The mortgage of 14 July 1933 to the Bank of NSW was discharged on 19 October 1937. A mortgage by the company in its new form of Punchbowl Brick and Pipe Co Ltd to Commercial Banking Company replaced it the very same day.⁴⁴

The production capacity of the Sutherland Works of the Punchbowl Brick Co was 7 million bricks per annum in 1939. The yard supplied the area south of the Georges River and down the South Coast. By then the yard was working intermittently and was stacking what it could not sell. It was reported that the yard would have to be closed down when there were 1 million bricks in storage.⁴⁵ At that time, the main shareholder of the Punchbowl Brick and Tile Co (Punchbowl) Ltd was Allott Properties Ltd with 40,000 shares of which Reginald Allott held 39,600 shares.⁴⁶

By February 1940, the cottage facing Oak Road on Allotments 16 and 17 had been demolished.⁴⁷

On 18 August 1949, the mortgage to the Commercial Banking Company was discharged.⁴⁸

Allotments 16 and 17, which had been leased for many years were finally added to the land held in freehold title in 1950. On 17 February 1950, a consolidated Certificate of Title was issued to the Punchbowl Brick and Pipe Co Ltd for Allotments 1-6, 14-17 and part of 13, after it purchased the freehold of Allotments 16-17 from the Holt-Sutherland Company.⁴⁹

⁴² C T 2945 f 194

⁴³ Valuer-General, Valuation Rolls, Sutherland Shire, SRNSW 10/12893, Card 8571

⁴⁴ C T 3893 f 192; C T 3422 f 215

⁴⁵ Premiers Dept, Inquiry into Brick Prices, 1929-30, SRNSW 9/2464, Minutes, 14 Feb 1939, p 556-8

⁴⁶ Alan John Brandreth, company secretary, Premiers Dept, Inquiry into Brick Prices, 1929-30, SRNSW 9/2464, Minutes, 14 Feb 1939, p 560

⁴⁷ Valuer-General, Valuation Rolls, Sutherland Shire, SRNSW 10/12889, Card 5738

⁴⁸ C T 3893 f 192; C T 3422 f 215

⁴⁹ C T 6098 f 117

An aerial photo of May 1951 showed what seem to be four kilns on the site, the long shop parallel to Princes Highway, and other sheds plus a conveyor to bring clay to the workshops (Figure 2.6).⁵⁰

An aerial photo of 1961 showed that the kilns had been moved and the workshops had been extended (Figure 2.7).⁵¹

The company leased a sub-station at 98 Princes Highway to Sydney City Council on 27 January 1966.⁵²

An aerial photo of 6 July 1970 showed that the conveyor has been removed and the kilns are not visible though they might be within a large building, which has been erected over where they were situated in 1961 (Figure 2.8).⁵³

On 19 April 1974, the land was transferred to G B S Project No 1 Pty Ltd. It was transferred to the Metropolitan Water Sewerage and Drainage Board, the same day.⁵⁴

Surveyor George Wing surveyed the land on 16 August 1974 to split it into two allotments (Figures 2.9 and 2.10).⁵⁵

The tall twin chimneys, known as one of the Shire's landmarks, were demolished on 22 February 1975. The site was emptied and turned into a water reservoir.⁵⁶

An aerial photo of 26 February 1979 showed the site has been cleared (Figure 2.11).⁵⁷

⁵⁰ Aerial Photo, Co Cumberland, Run 22, 471-98, May 1951

⁵¹ Aerial Photo, Cumberland 1961 Series, Run 46, 836-5037

⁵² C T 6098 f 117

⁵³ Aerial Photo, Cumberland 1970 Series, Run 24, 1906-5195, 6 July 1970

⁵⁴ C T 6098 f 117

⁵⁵ DP 589977

⁵⁶ Archaeological Assessment of Former Brickworks (Kirrawee Living Centres Project) Princes Highway, Oak Road & Flora Street, Kirrawee, NSW, by Edward Higginbotham, Summer Hill, for Planning NSW, January 2002, p 9

⁵⁷ Aerial Photo, County of Cumberland, Run 23E, 2763-197, 26 Feb 1979

2.1 Analysis of aerial photographs.

The following text was prepared by Dr. Edward Higginbotham in 2002, and updated for this report.

The following time-line describes the brickworks, as visible in the historical aerial photographs:

- 1930 The photograph is unclear, but appears to show:
Tunnel kiln and brickmaking workshops front Princes Highway.
Residence (?) on frontage near corner of Oak Road.
At least two round pipe kilns behind main buildings.
Possibly a downdraught brick kilns behind tunnel kiln.
(5 kilns were on the site by 1927 – apart from the tunnel kiln, there appear to be 2 pipe kilns and 1 downdraught kiln. The location of the other kiln is unclear).
Small size of brick pit on southern half of site and possible conveyor from brick pit to brickmaking workshops.
Entrance from Princes Highway.
South west corner of site covered in bushland, with some small structures (?). When acquired by the company in 1926, a three roomed cottage was located here.
- 1951 Extended tunnel kiln and brickmaking workshops front Princes Highway.
Note residence on frontage near corner of Oak Road.
At least four round pipe kilns behind main buildings.
Three downdraught brick kilns behind tunnel kiln.
Another building to west of pipe kilns.
Conveyor from brick pit to brickmaking workshops.
Large brick pit on southern half of site.
Note shadows cast by two tall chimney stacks.
Entrance from Princes Highway.
South west corner of site covered in bushland.
- 1961 Tunnel kiln and brickmaking workshops front Princes Highway.
Residence on frontage near corner of Oak Road.

Three pipe kilns behind workshops either covered by sheds or demolished, with two new ones constructed directly to east of residence.

Buildings south of new pipe kilns extend across site of previous pipe kilns behind workshop.

Three downdraught brick kilns behind tunnel kiln.

Conveyor from brick pit to brickmaking workshops.

Enlarged brick pit on southern half of site.

Note shadows cast by two tall chimney stacks.

Entrance from Princes Highway.

South west corner of site covered in bushland and possibly sheds.

1970

Tunnel kiln and brickmaking workshops front Princes Highway.

Brickmaking workshops extended to west to -

Residence on frontage near corner of Oak Road.

All pipe kilns either covered by sheds or demolished.

Three downdraught brick kilns behind tunnel kiln.

Shed erected over site of pipe kilns on west side.

Conveyor from brick pit demolished indicating exhaustion of brick pit and importation of brickmaking materials.

Enlarged brick pit on southern half of site.

Note shadows cast by two tall chimney stacks.

Entrance from Princes Highway.

Bushland on south of site reduced to minimal extent.

1979.

All brickworks facilities demolished, leaving only footings and yard surfaces.

Possible filling of brickpit.

Two additional historical photographs were located in the Kirrawee Living Centres Project Office at 136 Oak Road, Kirrawee in December 2001 (Figures 2.12 and 2.13).

The oblique aerial photograph shows two large buildings on the Princes Highway frontage. The shape of the building on the left and the presence of a brick stack indicate it is a tunnel or continuous brick kiln. The building on the right is clearly the brickmaking workshops, where the brick presses and pipe manufacturing equipment would have been housed.

To the left of the tunnel kiln is an entrance, together with a small brick building or office and in the corner of the site an aerial electrical sub-station or transformer. Behind the frontage, between the tunnel kiln and the brickpit are three standard down draught brick kilns and one round pipe kiln. The photograph is dated after the demolition of the inclinator and stacks in the brickpit, possibly 1970 to 1975 (Figure 2.12).

The tunnel kiln, the brick workshops, the entrance, office building and transformer tower are clearly visible in the other photograph, probably showing the workforce lined up along the road verge or pavement (Figure 2.13).

From a comparison of the plans and aerial photographs, it is clear that the tunnel kiln was present in the 1951 aerial photograph, along with the brickmaking plant, which was extended to the south by 1961 and on its west end by 1970. The three down draught kilns were present in the 1956 photograph and survived through to the 1970s. Four round pipe kilns were present in 1951 (Pipe Kilns 3-5 and unnumbered kiln. By 1961, one of the pipe kilns, to the east of the chimney stack is in ruins (no roof visible – unnumbered pipe kiln) and the group of three pipe kilns (Pipe Kilns 3-5) has either been covered over with a shed or demolished. Two new pipe kilns (Pipe Kilns 1-2) have been erected on the west side of the workshops. By 1970, the group of three pipe kilns (Pipe Kilns 3-5) is still covered with a shed or demolished. The group of two pipe kilns (Pipe Kilns 1-2) is likewise covered by a shed or demolished (Figure 1.2). The archaeological excavation indicated that Pipe Kiln 4 was at some point replaced by a down draught brick kiln (see Chapter 5).

2.2 Historical plans and photographs

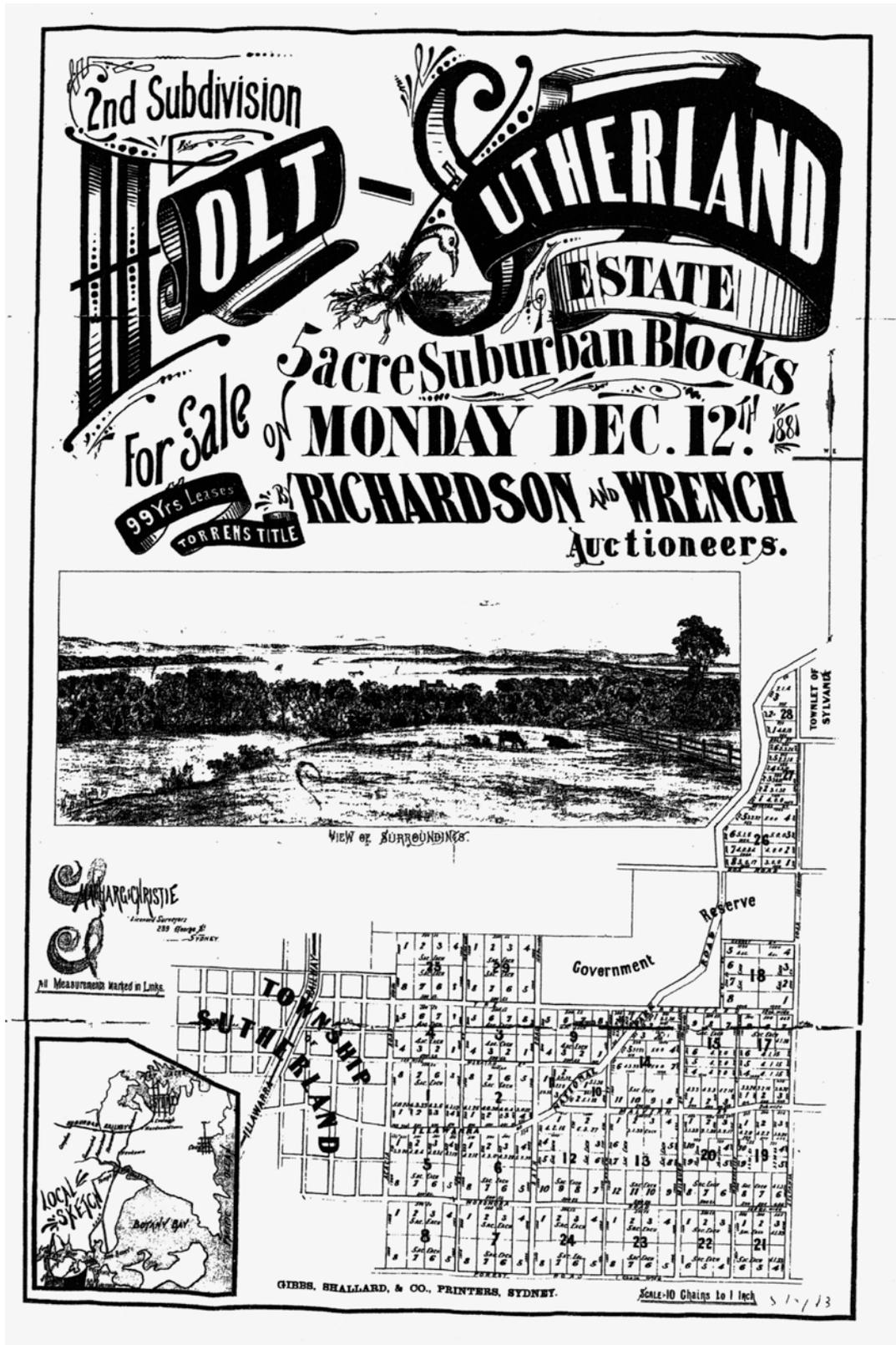


Figure 2.1 Original layout for Second Subdivision, Holt-Sutherland Estate. (Source: ML ZSP: S18/13)

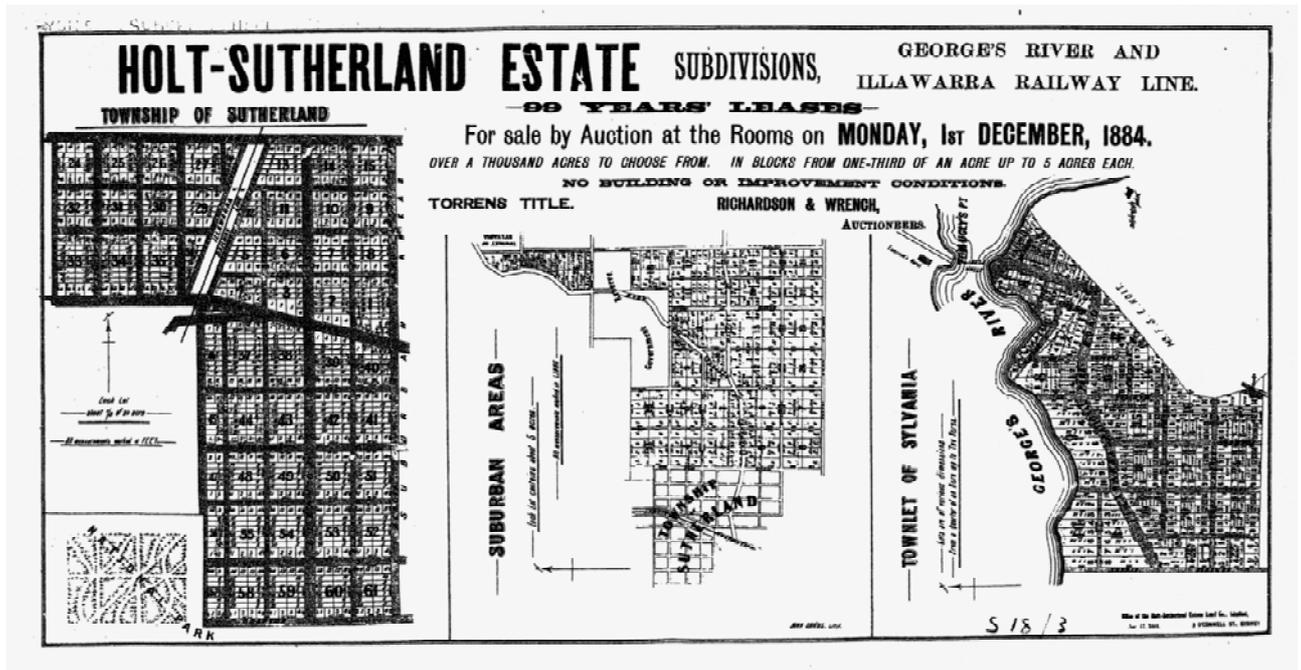


Figure 2.2 Later auction of Second Subdivision, Holt-Sutherland Estate. The middle plan covers that subdivision. (Source: ML ZSP: S18/3)

HOLT-SUTHERLAND
ESTATE
SUBURBAN BLOCKS Torrens Title
ILLAWARRA RAILWAY LINE
FOR SALE
99 YEARS LEASES ON THE GROUND
16 THE ROOMS
MONDAY FEBRUARY 15th
TUESDAY JANUARY 26th
BY 1886.
RICHARDSON & WRENCH
THE LOTS COLORED RED ARE SOLD
ILLAWARRA RAILWAY
TOWNSHIP OF SUTHERLAND
GOVERNMENT RESERVE
L.A. CURTIS
Licensed Surveyor
Under Real Property Act
30 Sydney Arcade
ALL MEASUREMENTS IN LINKS
JOHN SANDS, LITH.

The poster features a detailed subdivision map of the Holt-Sutherland Estate. The map shows a grid of lots, with some lots shaded in red to indicate they have been sold. A railway line is shown running through the estate, and a government reserve is also indicated. The text is arranged in a decorative, calligraphic style, with the name 'HOLT-SUTHERLAND' in large, bold letters at the top. The date and time of the auction are prominently displayed in the center. The name of the auctioneers, 'RICHARDSON & WRENCH', is at the bottom left. The map is signed 'L.A. CURTIS' and 'JOHN SANDS, LITH.' at the bottom.

Figure 2.3 Auction sale poster for Second Subdivision, Holt-Sutherland Estate in its new layout. (Source: ML ZSP: S18/35)



Figure 2.5 Aerial photo of March 1930 showing the brickworks. (Source; SR Map 32210)



Figure 2.6 Aerial photo of May 1951. (Source: Lands, Aerial photo, Co Cumberland, Run 22, 471-98)



Figure 2.7 Aerial photo of 1961. (Source: Lands, Aerial photo, Cumberland 1961 Series, Run 46, 836-5037)



Figure 2.8 Aerial photo of 6 July 1970. (Source: Lands, Aerial photo, Cumberland 1970 Series, Run 24, 1906-5195)

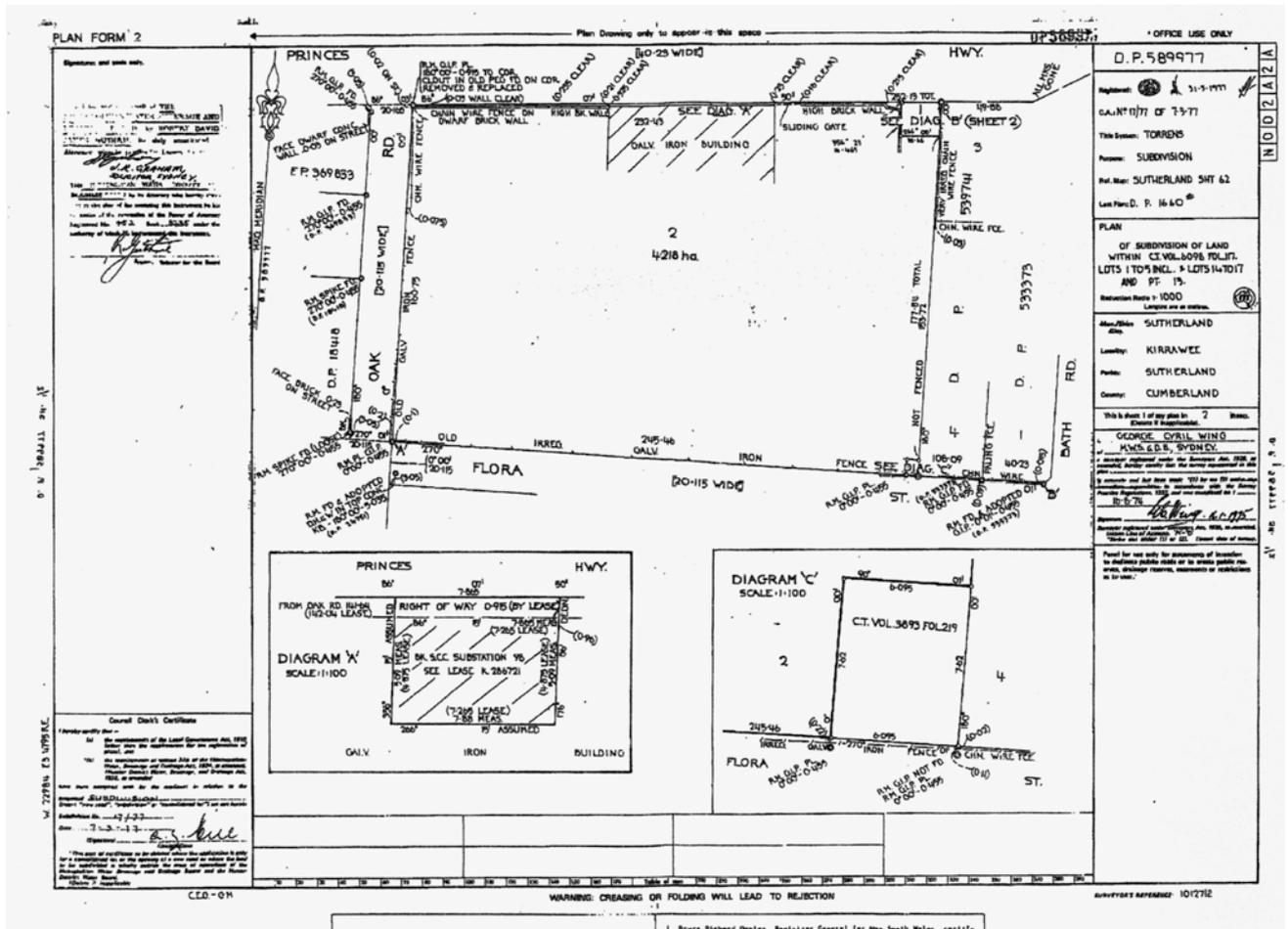


Figure 2.9 Subdivision of 6 August 1974. (Source: DP 589977)

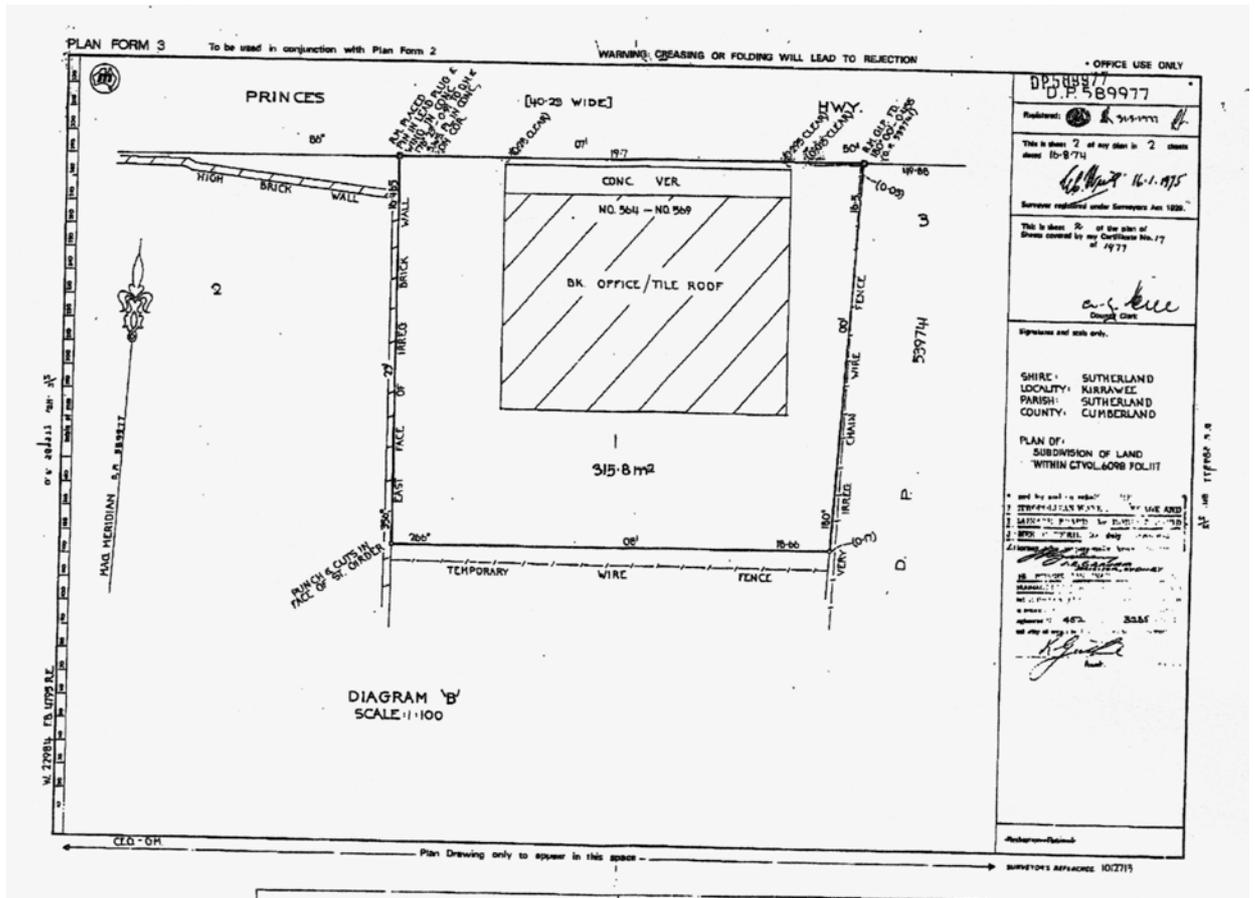


Figure 2.10 Subdivision of 6 August 1974. (Source: DP 589977, Sheet 2)



Figure 2.11 Aerial photo of 26 February 1979. (Source: Lands, Aerial photo, County of Cumberland, Run 23E, 2763-197)



Figure 2.12. Aerial view of Brickworks, undated. Source: Local resident.

Figure 2.13. View of Brickworks from Princes Highway, undated. Source: Local resident, Kirrawee.



Figure 2.14. Oblique aerial view of Brickworks from the south undated. Source. Ron Ringer, *The Brickmasters 1788-2008*, Dry Press Publishing, Sydney, Horsley Park, 2008, p 281.

Figure 2.15. The fired pipes being transferred from the pipe kilns, c.1959. Source. Ron Ringer, *The Brickmasters 1788-2008*, Dry Press Publishing, Sydney, Horsley Park, 2008, p 281.

3 SITE SURVEY.

Site inspection was completed by Dr. Edward Higginbotham on 19 December 2001.

The site is now vacant, except for the brick pit itself, which is dug into shale, and an electrical substation, located on the Princes Highway frontage and built of dry pressed brick with a flat roof.

The presence of former structures on the northern half of the site is indicated by yard surfaces, sealed with road metalling and demolition materials or fill, together with concrete slab footings of buildings.

There is a large concrete slab, bounded by a brick footing on the Princes Highway frontage in the position of the former tunnel kiln. The slab is slightly raised up above the natural ground surface and is directly north of the footings of the tunnel kiln. Another large area of concrete slab is present in the position of the former brickmaking workshops, now adjacent to the electrical substation. Bolts set into the concrete slab indicate the positions of steel girder uprights, which supported the superstructure of the brickmaking workshops.

The footings of all other structures are now totally obscured by fill and demolition materials. However there is every indication that the sites of the pipe kilns and down draught kilns survive intact, with footings likely to survive.

The site is likely to possess remains of the broad range of brick and pipe making kiln technology, from down draught kilns, to pipe kilns and a tunnel kiln. Demolition layers on the site are also likely to contain evidence of brick and pipe manufacturing technology and kiln furniture. The excavation of the Lithgow Pottery, Brick and Pipeworks, revealed the remains of a tunnel kiln and a pipe kiln, together with numerous examples of pipe kiln furniture.⁵⁸ Similar results are likely from this site.

The range of kiln technology on this site was widespread throughout New South Wales, although the survival of comparative sites is now becoming rare. The tunnel

⁵⁸ See Edward Higginbotham. Lithgow Valley Colliery Co Ltd, and its Pottery, Brick and Pipeworks. Report on the Excavation of part of the Brick and Pipeworks, Archival Report, Vol. 1, 2, with an Introduction by Professor R I Jack. Coalex Pty Ltd. 1982.

kilns at the former Austral and Bedford Brickyards in Alexandria are well known as a local landmark on the Princes Highway. Other comparative sites include the Goodlet & Smith Brickworks at Holroyd.

The house sites, formerly located on the western part of the site, are of little or no significance, dating from the 1880s onwards, or more likely the early 20th century.

3.1 Photographs.



Plate 3.1. Brickpit from east end.

Plate 3.2. Concrete slab on the site of the tunnel kiln, looking east.



Plate 3.3. Concrete slab floor of former brickmaking workshops.

Plate 3.4. Boundary wall on Princes Highway frontage at north-western corner of the site.



Plate 3.5. Fig tree, planting.
Plate 3.6. Coral tree, planting.



Plate 3.7. Electrical Substation, Princes Highway frontage.