

Why Did the Hoffman Brick and Pottery Works Stop Making Bricks?

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This paper briefly examines themes – innovation, importation and adaption, and the effects of the booms and busts of Australian history – addressed in the 1988 ASHA conference. The author, who is with the Victoria Archaeological Survey, has undertaken research on Melbourne's former Hoffman brick and pottery works at Dawson Street, Brunswick.¹ This site was opened in 1884 as the No.2 works of Hoffman Brick and Potteries Company. The Company's No.1 works, which was opened in 1870, was located to the north of Dawson Street and the two plants were linked by a light railway. The No.2 works have been continually used as a brickworks from 1884 to the present, some 104 years.

INTRODUCTION

The history of the Hoffman Brick and Potteries Company has been discussed in depth elsewhere.²

Briefly, the Hoffman company was established in 1870 to mass produce bricks using the Hoffman patent kiln and the Bradley and Craven brick press. Once established the company entered a period of expansion aided by Melbourne's building boom from 1870 to 1890. During this time five Hoffman kilns were erected as well as a Foster kiln. Approximately ten brick machines were in operation producing some 18,000 bricks per hour. An extensive pottery works was established initially supplying mainly tiles and drain pipes and later domestic pottery such as the company's Melrose ware. The company even had its own locomotive to shunt the works siding which connected with the Victorian Railways at South Brunswick.

By 1890 Hoffman was the largest brick and pottery works in Victoria, however the 1890s depression halted company expansion. The company joined the Brick Co-operative when it was formed in 1896. The Co-operative regulated prices and output from member brickworks.³ As the depression ended business picked up and the works was expanded to increase the production of pottery, especially domestic wares.

The brickworks, however, never recovered the momentum of the early period. During the 1920s and 1930s the works gradually ran down, and following the Second World War production reached an all-time low. The No.1 works was stripped and sold, and the brickworks at No.2 was closed for repairs for eighteen months.

But in 1960 a friendly merger resulted in Clifton Holdings taking over the company. Although the pottery works was closed and sold, the brickworks was gradually modernised and today represents a good example of a modernised brickworks. For the archaeologist, the fabric of the No.2 brickworks retains the form and nature of the works as it operated for much of its history which adds considerable interest to the site.

The Dawson Street site has been recommended for inclusion on the Historic Buildings Register.

WHAT'S IN A NAME?

Unlike most other brickworks in Victoria which tend to be named after either their location (e.g. Northcote, South

Brunswick, Hawthorn, Sandhurst, City, Oakleigh), proprietors (e.g. Butlers, Walkerden, Fritch-Holzer, Clifton, Glew, Gamble) or strange devices (Excelsior), the Hoffman name refers to a kiln design.

Frederich Hoffman, who patented his kiln in 1858, lived in Prussia. The kilns following his patents are known as Hoffman kilns. In 1870 the name Hoffman Patent Brick and Tile Company symbolised the coming of mechanised brick production. The name would have been a *crie de couer* to the Glews and Gambles and the other non-mechanised brickworks which used hand-made technology like their forefathers in England.

A further addition occurred during the company's reconstruction in 1884. It was now the Hoffman Patent Steam Brick Company Ltd, re-emphasising both the modern technology and modern form of capitalisation required to acquire the technology.⁴

INNOVATION

The mechanisation of brickworks had been discussed in the 1860s⁵ and attempts were made to produce brick machines and refine kiln design but they seem to have been experiments that did not reach production or gain widespread use.⁶ The Hoffman company was the first brickworks to introduce mechanisation on a large scale in Victoria. There is no doubt that the company was innovative in its early years.

Hoffman's first innovation was to gamble on introducing the mass production of bricks using steam-powered Bradley and Craven brick machines and continuous burning Hoffman kilns. There was no guarantee that the company could sell the output of its works which were a new type (the dry pressed brick) and new size of brick.

Indeed, as the production method was new in Victoria, there was no guarantee that the technology would work. For a while the company was plagued by the shortcomings of the equipment it ordered. The Director's Minute Books reveal consistent trouble with poor quality British-made machinery. Virtually everything had to be rebuilt, an indication, according to Parsons, of British decline as an industrial nation and a boost for the local engineering industry.⁷

The result was a limiting of production. The Directors note that they needed an output of 35 500 bricks per day to

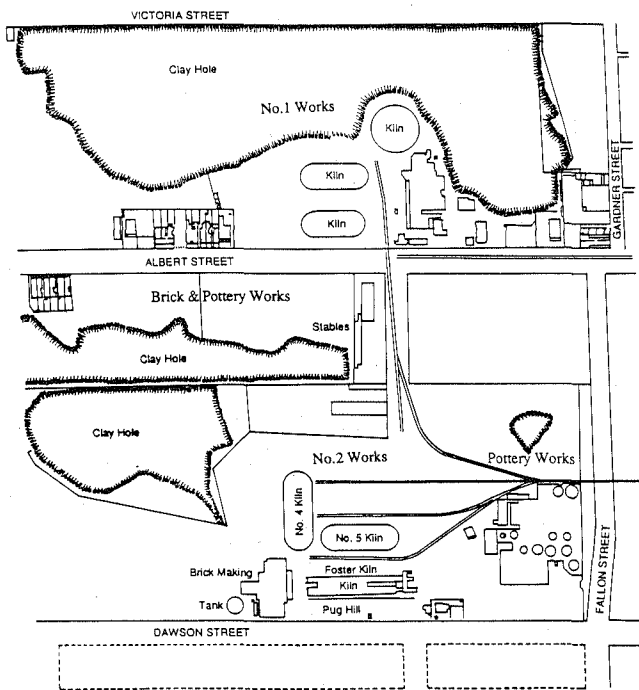


Fig. 1: A 1904 plan of Hoffman Brick and Pottery Works, Brunswick from MMBW 60' to 1" plan.

remain economically viable, but production delays limited production to 25 500 bricks.⁸

Despite this, demand for the company's bricks was high and seems to reflect both an increasing demand for building material in the boom period of the 1880s and an increasing market share for the dry pressed brick at the expense of the hand-made brick.⁹

At this juncture it is worth asking how innovative it is to import technology from overseas. The essence of innovation is introducing something new, but how new is it to bring established technology from England and apply it in Australia. This was not particularly novel in Victoria as the mining industry had done just that in the early 1850s. However, the point turns on the question of how novel was the combination of Bradley and Craven brickpresses and Hoffman kilns.

Although in-depth comparative research needs to be undertaken on this issue, it appears that in England, the combination of Hoffman kilns and Bradley and Craven brickpresses was fairly rare until the 1890s.¹⁰ In America such technology would not have come into general use until the 1890s.¹¹

If this impression is born out by further research then it is clear that the Hoffman company was innovating in the world context.

Innovation in the context of industrial history is not just the commencing of something new, it is also an attitude that is receptive to new ideas, that is looking for new ideas. Consequently, evidence of an innovative company is expressed not only by new plant but by all aspects of its operations from its letterhead to the works. Evidence for an innovative attitude can be found in company records, patents and in the archaeological record.¹²

Using these measures the Hoffman company would appear to be most innovative in the period 1870–1890.

The original Hoffman kiln patent in 1859 was for a circular kiln with the fire and heat directed through a series of chambers gradually heating the bricks. One of the first Hoffman kilns was erected in England in 1868.¹³ Two years later the first kiln erected at the company's works was a circular Hoffman kiln following the 1859 patent.

However, in 1870 Fredrich Hoffman patented a modified design, an oval kiln, which increased the number of chambers.¹⁴ The company's second kiln erected in 1871 was to the 1870 patent. This indicates that the Hoffman company was aware of advances in brickmaking technology and ready to rapidly adopt new improvements.

All subsequent brick kilns erected by the company, save one, were Hoffman kilns to the 1870 patent. The exception is also very interesting. The Director's Minutes refer to a Foster kiln erected at the No.2 works when it opened in 1884. The doyen of brickmaking text books, A.B. Searle, mentions Foster kilns only once in his various texts. In *Kilns and Kilnmaking* Searle notes a patent by J. and C. Foster in 1879 for a form of tunnel kiln.¹⁵

While the principle of a Hoffman kiln is that of moving heat through chambers filled with bricks, a tunnel kiln involves moving bricks through chambers of heat. The crucial problem is how to do this without damaging whatever was being used to transport the bricks. Searle gives several examples of the techniques developed however none seemed to be successful.

That the Foster kiln was a tunnel kiln is confirmed by mention of 'trucks for the Foster kiln' in the Director's Minutes and by a comment of a Company Director in 1949. Nothing else is known about the kiln. An idealised section reproduced from Searle and the 1904 MMBW plan shows the kiln in plan (Fig. 4). Given that a company, Fosters of Sydney, was involved in brickmaking machinery, it may be that the kiln is an Australian design.

However, the point is that, in 1885 tunnel kilns were experimental and use of the Foster kiln six years after it had been patented indicates a willingness to experiment that put the Hoffman company at the leading edge of brickmaking technology at this time.

A further example is the continued attempts of the company to try and turn out an acceptable brick using the Platt type brickpress.

As early as October 1878 the Directors report 'The public have complained very much of the quality of the bricks made by Platt's machine. There is no doubt our trade has been greatly injured in consequence'.¹⁶ They decided to only use the machine in emergencies. However, in 1885 there are still complaints about it¹⁷ and in 1888 there are intriguing references to a Platt brickmaking machine for the pottery works (possibly for tiles).¹⁸ In 1890 and 1891 orders were placed for a new Platt machine.¹⁹ However, during the 1890s depression the Platt machines were sold.²⁰ Two Platt-type presses remain on the site in the scrap heap and nobody in the company seems to know how they got there.

The experiments with the Platt brickpresses occurred despite the Hoffman company apparently being happy with the performance of the Bradley and Craven-type machines. This is a further example of the company's willingness to try different methods of brick manufacture.

Together these examples show that, having established its works, the company was willing to adopt improvements and experiment with ways of improving the operation of its works. This trait suggests that it was a highly innovative company over its first 20 years.

TECHNOLOGY TRANSFER AND ADAPTION

The process of technology transfer as exhibited by the Hoffman company is quite straightforward importation either by using patents (such as Hoffman kilns) or actual examples of technology (such as the Bradley and Craven brickpress). The only skills that might have been required to be imported are the engineering skills needed to

assemble the plant and to make it operational. However, such was the development of Victorian industry by 1870 there is no suggestion that such skills needed to be imported.

There is a contrast in this process with the transfer of mining technology during the mining boom, when in addition to machinery, whole groups of Cornish and Welsh miners were imported along with their skills in all aspects of mine working.²¹

The interesting thing about the technology is that it acts to de-skill the operation of the brickworks; the company directors, unlike John Glew, head of a prominent non-mechanised brickyard, probably never made a brick in their lives. At the workers' level, jobs were specialised into task-specific work such as 'yard, clayhole, machine-drivers, truckers, setters, burners, drawers, engine-drivers, fitters and carpenters'. Work was paid according to production levels, for example setters were paid eight pence per 1000 bricks set into the kiln.²²

It is also of interest to observe that local industry began producing copies of brickmaking equipment. Indeed the local machines made by Langlands, then Anderson and Austral Otis, are mainly copies of the Bradley and Craven design with minor variations, presumably to avoid breaching patent rights.

Adaption is a more difficult question to discuss as there are two possible uses of the term. Adaption in the general sense of the term refers to the modifying of something to suit new conditions. Virtually all the activities of a company such as Hoffman – establishing a new plant, marketing a new product, changing the product to suit demand, modernising the plant – can be seen as adaption of some sort. Yet this is also normal company activity and it is difficult to see the point of discussing the notion of adaption at all.

A more familiar notion of adaption, for archaeologists at least, is adaption in the Darwinian sense applied to human culture. This is generally associated with the 'New Archaeology' of the 1960s,²³ and has come under criticism from a number of quarters.²⁴

Applying such a concept of adaption to the Hoffman case is difficult²⁵ largely because it is difficult to evaluate what is adaptive or maladaptive behaviour. Also, the notion of

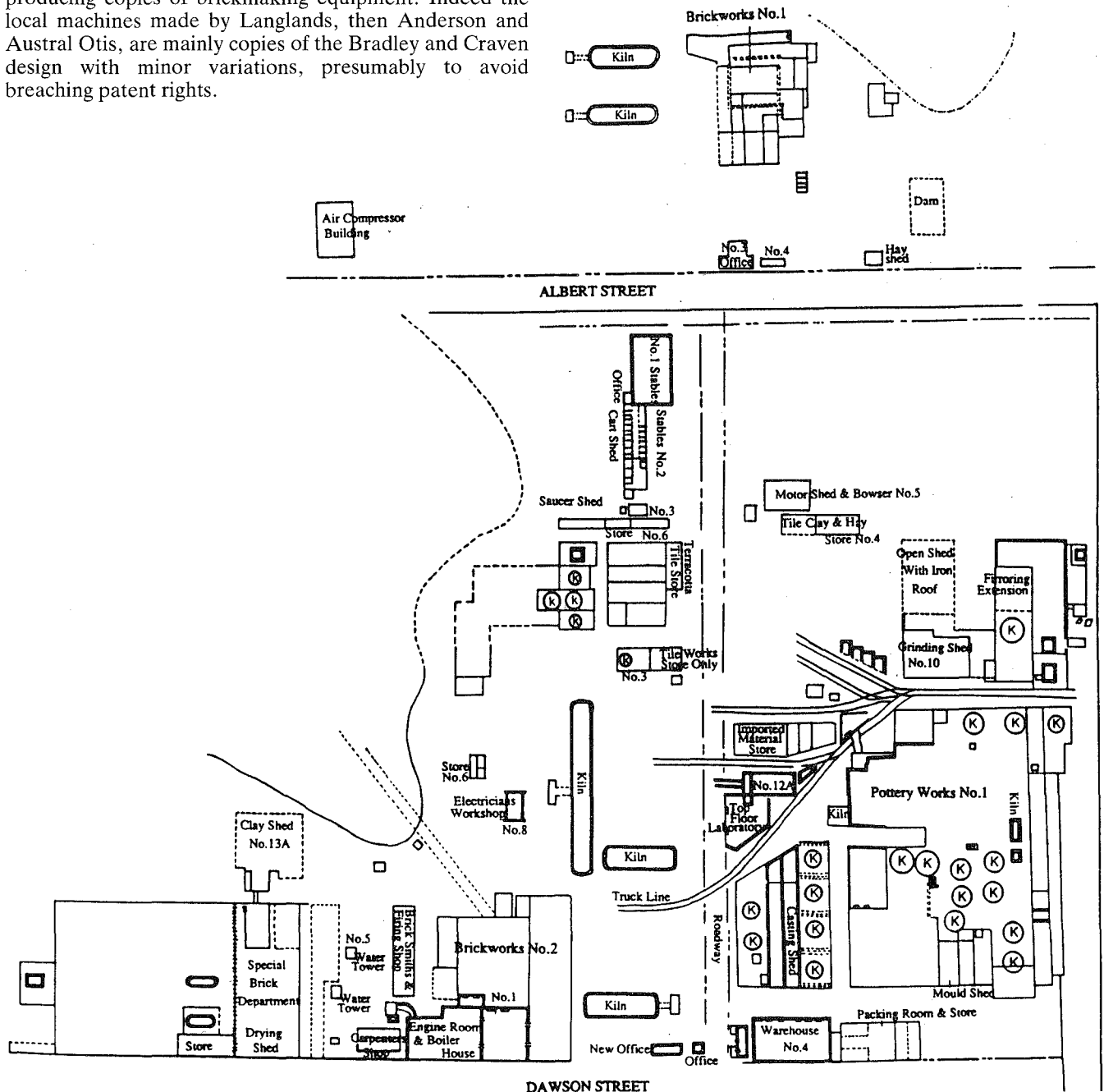


Fig. 2: Plan of Hoffman Brick and Poteries Ltd. (not to scale, traced from a plan dated November 1929, in the University of Melbourne Archives).

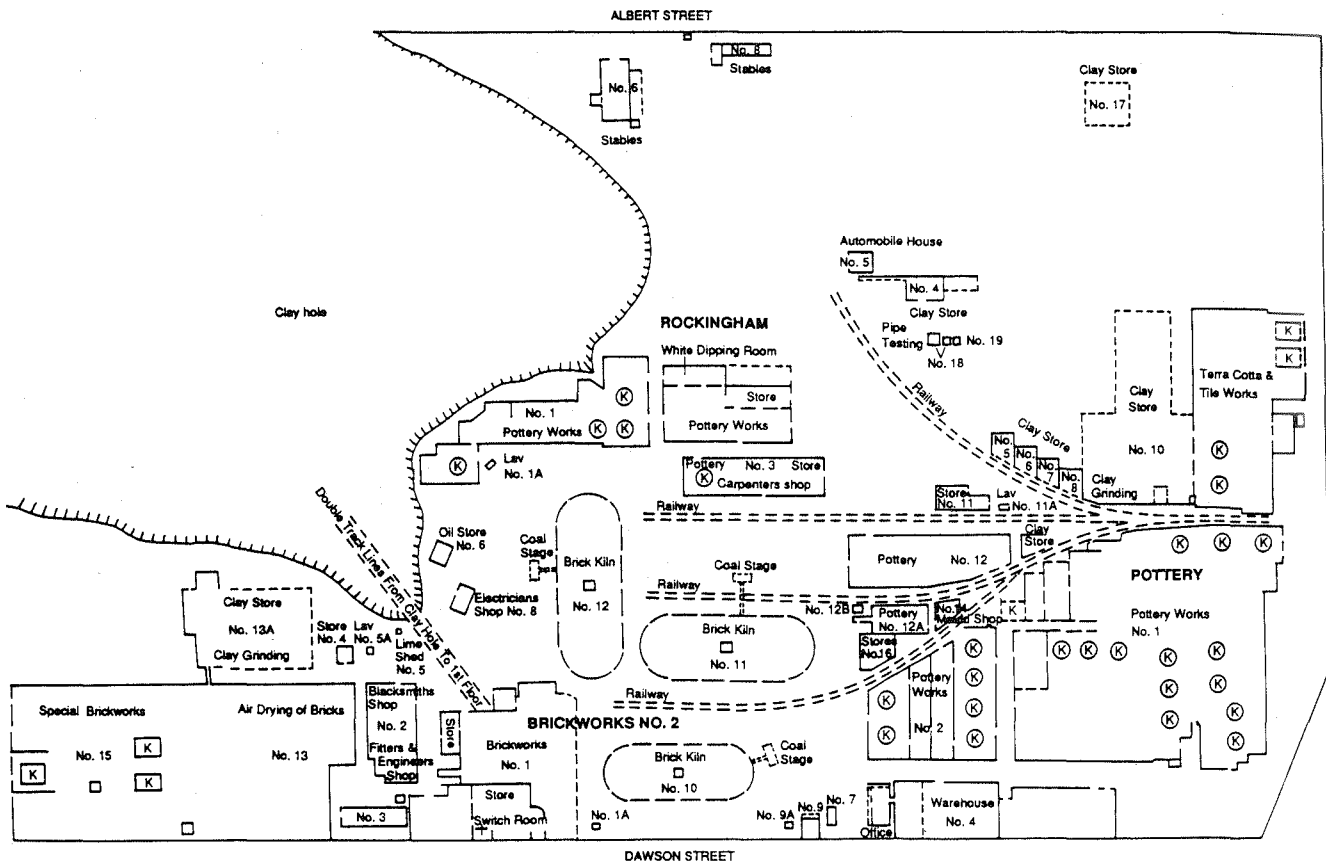


Fig 3: Plan of Hoffman Brick and Potteries Ltd. (traced from a plan dated 16 March 1942, in the University of Melbourne Archives).

adaption is so general that it masks other processes that shaped the company's history and the archaeological record on the Dawson Street site.

The archaeological study of the No.2 works indicated that although significant elements of the brickworks remained substantially the same as in the 1890s, there was evidence of modifications to the works to 'modernise' it – that is, to adapt the nineteenth century plant to modern conditions, however the processes underlying modernisation may be varied.

The Hoffman kilns, for example, were converted to oil-firing in the early 1960s, the period after Hoffman was taken over by Clifton Holdings. Later when oil prices increased in the early 1970s, the kilns were converted to natural gas. The processes here reflect the changing prices and availability of energy.

The wickets (entrances to the kilns) were modified to accommodate fork-lifts and pallets of bricks which resulted in substantial savings of labour costs which in the post war period have increased relative to other costs of production.

The brickpresses are essentially unmodified although the number of presses has increased as Clifton moved in extra brick presses from closed-down brickworks. The major changes have been the replacement of the common steam-driven shaft with individual electric motors and the addition of cages around the brick presses to prevent workers from accidentally being dry-pressed. The placing of the cages, which detract from the aesthetics of the presses, reflect the increasing concern for occupational health and safety as expressed in government policy.

It is only in the grinding process where major changes in the plant have occurred. The clay holes were exhausted and sold for garbage tips. Clay has to be trucked in from other sources and ground in a modern plant erected in the mid-1970s.

Despite these modifications the brickmaking plant of 1959, the last year of Hoffman operation, would have been familiar to the employees of 1890.²⁶ The explanation for the slow change in brick production technology and the decline of the Hoffman company are rooted in the 1890s depression and the years that followed.

DEPRESSION, BOOM AND BUST

The 1890s depression halted over 20 years of continued expansion of the Hoffman company. The immediate response of the company was to sack workers, close down the works and sell existing stock. In the period 1890–1901 it appears from the Director's Minute Books that the No.2 works was closed and that the No.1 works operated intermittently.

More significant for the ultimate fate of the company was the formation of the Brick Co-operative in 1896. The 1890s depression had brought on a cost-cutting war which saw brick prices drop to 14 shillings per 1000, apparently way below cost price.²⁷ The Co-operative comprised major mechanised companies, (Hoffman, Northcote, Butlers, Fritsch-Holzer and New Northcote) and aimed to increase brick prices by controlling supply.

The Co-operative used the financial resources of the larger companies to purchase smaller brickyards sent bankrupt by the depression. Other brickworks, such as Cliftons, were rented by the Co-operative and did not produce bricks. Output among the larger brickworks was controlled and companies were paid a royalty on total brick sales to compensate.²⁸

It is interesting that the major response of the prominent brick companies to the challenge of the 1890s depression was to cut prices, close the works and form a monopoly. The Director's Minute Books reveal that there were, in effect, monopolies in the tile making and drainage pipe

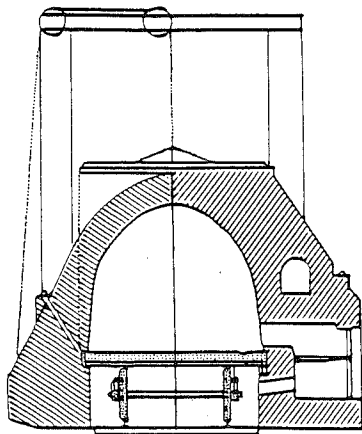
industries as well. The manufacture of pottery was not monopolised and companies such as Bendigo Pottery, Cornwall's Pottery and Hoffman competed for orders.

With the end of the 1890s depression and the increase in brick prices the Hoffman company regained profitability but not the high level of production previously reached. The brickworks operated at varying capacity according to demand and this pattern remained unchanged for 50 years. The manufacture of special bricks (bricks of special shape or quality) expanded largely as the Co-operative allowed only Northcote and Hoffman to make them. At £7.10.0 per 1000 they were a profitable item.

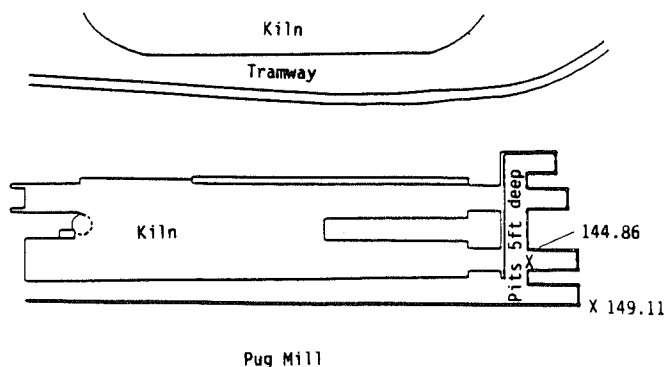
Improvements to the works were few in number. In 1908 the Foster kiln was demolished and a new Hoffman kiln erected. By 1913 the original circular kiln at the No.1 works was demolished.

The electrification of the plant which had been discussed since 1926 occurred in 1931. The works was closed at this time owing to the Great Depression and this must have facilitated the work. The electrification did not result in any great changes to the plant as the work resulted in steam-driven shafts being replaced by individual electric motors for each press. It is quite easy to see how this was done 50 years after it occurred.

The pottery works which included the production of domestic ware (the Melrose ware of Hoffman was quite popular), sanitary ware, drain pipes and terracotta tiles continued to expand. The works reached its maximum extent by 1929 (Fig. 3)



Section of 'Foster's' Tunnel Kiln (after Searle 1915, Figure 418)



Plan of Foster kiln at Hoffman's Dawson St Brickworks (after MMBW 40':1" Detail Plan 1897 dated 1905)

Fig. 4: Plan and section of a Foster kiln.

Despite this, there is a detectable lack of vigour in the company. The original directors had all retired or died by 1905. No experiments, no major improvements were made. Except for the pottery and special brick departments the works looked much the same in 1929 as it did in 1904. The most vigorous growth was in the pottery where competition was strongest.

The lack of competitive incentive initially led to the lack of experimentation and development of the company's brick production operation, but was followed by the general lack of maintenance of the plant. This was enhanced in the period of the Great Depression and World War II by shortages of capital and labour.

In the post-war period the company was faced with run down plant, lack of manpower and lack of vigour. Calls were being made for the brick industry to modernise, especially to invest in new plant such as tunnel kilns, but the Hoffman Directors would have none of this.

'We have also heard of Tunnel kilns for brick manufacture. Such a kiln is not new - one was installed here many, perhaps 50 years ago, but was discarded. . . We are not prepared to spend the shareholders' money in such an experiment ...'²⁹

SLOW STRANGULATION OF THE MIND

What a far cry from the attitudes of 50 years ago! Bracham-Kiddle's speech reflects a strangled corporate mind. Within the decade the more outward looking companies such as Cliftons, New Northcote and Selkirk were erecting tunnel kilns, and modernising their plant. Ironically, Hoffman was taken over by Cliftons in 1959; 60 years earlier it had been Hoffman via the Co-operative which had controlled Cliftons!

Lest this decay be blamed on increasing socialism via government regulation, it should be pointed out that it was the brick industry itself and Hoffman in particular that chose the road of monopolistic complacency rather than the free enterprise ideals which the Directors no doubt supported. This complacency reduced a once vigorous company, an innovative leader in its field, to an industrial archaeological treasure house.³⁰

NOTES

1. Stuart 1988.
2. Parsons 1970.
3. Stuart 1987.
4. Parsons 1970: 425-26 and 428-29 on the nature of the capitalisation of Hoffman.
5. Mayes 1861.
6. Lewis 1972.
7. Parsons 1970: 420.
8. Parsons 1970: 421.
9. Parsons 1970: 425.
10. Cox 1979.
11. Gurcke 1987.
12. Clearly there is room for a fuller discussion of the concept of innovation. See Bowley 1960:25-43.
13. Hammond 1977:181.
14. Cox 1979, Hammond 1977.
15. Searle 1915:427-28.
16. Director's Minute Book 21.2.1878.
17. Director's Minute Book 15.6.1885
18. Director's Minute Book 21.5.1888
19. Director's Minute Book 6.10.1890, 27.7.1891
20. Director's Minute Book 23.11.1899
21. See Blainey 1964:106, 124; and Faull 1987:139-142.
22. Royal Commission on the Brick Industry: 31.
23. See the papers in Binford 1972.
24. See for example Hodder 1986:Chapter 2; and Thomas 1981:165-177.
25. The author feels that the notion of adaption in the context of industrial archaeology needs further discussion.
26. Indeed the Director's Minute Books note that in one case Mr J. Pobjoy who retired as manager of the brickworks in January 1940 had 61 years of service!
27. Royal Commission on the Brick Industry :6.
28. Royal Commission on the Brick Industry :6.
29. Speech by J. Bracham-Kiddle, Director at the General Meeting 24.11.1949.
30. The author acknowledges the help of David Malloney, Kristal Buckley, the University of Melbourne Archives and Clifton-Nubrick.

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Director's Minute Books

- Speech by J. Bracham-Kiddle, Director at the General Meeting 24.11.1949, in Hoffman Collection, University of Melbourne Archives.