

Best Bricks: a study of advertised brick pricing in Victorian New Zealand

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ABSTRACT: While timber was suitable for construction, more than permanent materials were needed for real buildings. Stone was available but transport limited its distribution. Bricks could be made almost anywhere. This paper examines New Zealand brick pricing based on advertised data from published newspapers across the Wellington, Nelson, Canterbury, Otago and Auckland regions. It provides an overview of brick pricing during this critical period of the birth of colonial New Zealand. The price of bricks will be compared with other essential supplies, to help understand changes in the cost of buildings.

Introduction

There can be no doubt that a brick house is better than a wooden one, and as little doubt, considering its durability, that it is a cheaper one. The difference of production lies in the cost, but the value in view of the investment lies in the permanence.¹

From the Tower of Babel² to the Three Little Pigs, bricks have been praised as the preferred choice in building. Bricks combine substance and permanence in construction with convenience and accessibility in production. Early European settlers dreamt of "exchanging the frail and ephemeral, for the strong and enduring."³ This paper explores the brick industry in the early settlement of New Zealand. It does not examine the production

process nor does it survey the use of bricks. Instead, it explores changes in price to map the trajectory of the brick economy through Victorian New Zealand, with a focus on the 1880s.

Manufacturing Data and Statistics

Despite the long history of bricks as a building material there is little published data on their economics or pricing in early New Zealand. A survey of published books, government statistics and academic papers yields minimal pricing data. It does however provide information on nineteenth-century brick and tile works, manufacturing techniques and production output.

The earliest published account of brick manufacturing comes from WN Blair's 1879 book: *The Building Materials of Otago and South New Zealand Generally*.⁴ Across six pages, Blair

records colonial brick manufacture throughout the Otago region, including a detailed analysis of Otago clays while also arguing the respective merits of white versus red clays and colonial versus English bricks. Blair provides an overview of colonial brick manufacture noting the employment of machinery in "almost every stage of the process."⁵ Blair records no information as to either production volumes or brick pricing. A century later, Thornton (1982) provides an extensive record of colonial brick manufacturer in *New Zealand's Industrial Heritage*.⁶ Across 10 pages, Thornton details the beginnings of brick manufacturing throughout New Zealand. Thornton surveys each region, recording the names and details of first brick makers in each of the major, and some minor, colonial towns. Thornton

Zealand Generally p 76.

⁵ Blair *The Building materials of Otago and South New Zealand Generally* p 60.

⁶ Thornton *New Zealand's Industrial Heritage* p 114.

¹ "Brickmaking by Machinery" p 5.

² "And they said one to another, Go to, let us make brick, and burn them throughly. And they had brick for stone, and slime had they for mortar." *The Bible* Genesis 11:3.

³ Blair *The Building materials of Otago and South New Zealand Generally* pp iii-iv.

⁴ Blair *The Building materials of Otago and South New*

provides a collection of national brickworks from 1840 to 1880 appending an index of 84 individual works spread across 28 different centres,⁷ but is silent on production volumes and brick prices.

Salmond (1986) provides a national view of brick manufacturing techniques throughout the nineteenth century.⁸ He traces the evolution of brick making from hand manufacture to machine-based production, charting the history of manufacture from the early sun-dried bricks and clamp kilns of the 1840s through to the machinery manufacture and Hoffman kilns of the late nineteenth century,⁹ but also fails to elucidate on price or production volumes. Most recently, John Oliver (2006) published a guide to the use of bricks in New Zealand, including a history of brick making in Auckland,¹⁰ but again lacking details of production.

Archaeological investigations have also explored the colonial brick industry. Best (1998) provides a short history of Auckland brick manufacture as part of Felgate's study of

⁷ Thornton *New Zealand's Industrial Heritage* p 179.

⁸ Salmond *Old New Zealand Houses* p 45.

⁹ Salmond *Old New Zealand Houses* p 46.

¹⁰ Oliver *John Oliver's Brick Book* p 22.

Title	Author
1843-44	Mathew Laurie (2). 25/- per 1000, 30/- per single 1000 (<i>Daily Southern Cross</i> 23 December 1843 1, 3)
1855	Belgian Brickworks, Cox's Creek. July £6/15/-, November £5/10/- per 1000 (<i>New Zealander</i> 24 July 1855)
1865	Caledonian (24). No higher than £4/10/-. (<i>Wellingtonian</i> 7 January 1865 3,4)

Table 1: Brick Prices 1843-65.

His Majesty's Theatre,¹¹ charting the key technological developments and major manufacturers across the Auckland region. Best traces the evolution of brick firing in Auckland from temporary clamps on the slopes of Mt Eden to the permanent brick-making machines of the Caledonian Brickworks at Cox's Creek. Fellow archaeologist Clough (1989) focuses his attention on Auckland's earliest commercial enterprise "The Pollen Brickworks."¹² Both Best and Clough are referenced extensively in Simon Bickler's online *New Zealand Historic Brick Database*.

The remaining publications relating to brickmaking or brickworks in the early colony are limited to regional or single site histories. Lundy (2005) provides a comprehensive history of the Hoffman kilns of Manawatu,¹³ while Seed (1954) records the history of the

¹¹ Felgate *His Majesty's Theatre Excavations* p 139.

¹² Clough "Documents and Digs" p 4.

¹³ Lundy *Nine Thousand Bricks a Day* p 13.

Otago brick and tile industry¹⁴ and Eaves (1990) documents the history of Auckland's heavy clay industry.¹⁵ Of these three histories, only Eaves records any economic data on the brick industry, providing a table with limited data on brick prices from 1843 to 1865 based on newspaper advertisements (see Table 1).¹⁶

A search of the New Zealand Research Institution's database for the terms "brick" and "history" returned only six thesis papers, only one of which discussed colonial brick manufacture. Searching the same terms across the Victoria University library catalogue returned 19 New Zealand results with none offering brick pricing, economic or manufacturing history. Limited production data is available from the various Censuses of Manufacturing and some information on the

¹⁴ Seed "The History of the Brick, Tile and Pottery Industries in Otago" pp 6ff.

¹⁵ Eaves "The Heavy Clay Industry in Auckland 1830-1930" p 13.

¹⁶ Eaves "The Heavy Clay Industry in Auckland 1830-1930" p 13.

numbers employed in the various brick industries ("Brick, Tile and Pottery Works") can be extracted from the quinquennial Censuses of Populations and Dwellings. The only record of brick pricing comes from the 1875 Yearbook, where a single entry records the price of bricks in Otago at £2 per 1000.¹⁷

Newspaper Records

The digitised resources of *Papers Past*, provided by the National Library of New Zealand, include over 3 million pages across 83 publications dating from 1839 to 1945.¹⁸ This digital database offers the researcher a wealth of opportunities, limited only by imagination and the quality of the Optical Character Recognition (OCR) processing. A search of all digitised New Zealand newspapers published between 1840 and 1900, identified 10 titles recording brick pricing, as listed in Table 2

Early New Zealand newspapers recorded brick pricing as either individual classified advertisements or as part of a general market summary. The search term "bricks per 1000" yielded 1654 results between the years 1840

¹⁷ New Zealand Government *The Official Handbook 1875* p 104.

¹⁸ "Welcome to Papers Past [Introduction]" n.p.

Newspaper	Region / City	Period Published
<i>Daily Southern Cross</i>	Auckland	1843–1876
<i>Lyttelton Times</i>	Canterbury	1851–1869
<i>New Zealand Gazette and Wellington Spectator</i>	Wellington	1839–1844
<i>New Zealand Herald</i>	Auckland	1863–1924
<i>The Auckland Star</i>	Auckland	1870–1945
<i>The Colonist</i>	Nelson	1857–1920
<i>The Evening Post</i>	Wellington	1865–1945
<i>The Nelson Examiner and NZ Chronicle</i>	Nelson	1842–1874
<i>Otago Witness</i>	Otago	1851–1901
<i>Wellington Independent</i>	Wellington	1845–1874

Table 2: Newspapers recording multiple matches against "bricks per 1000" between 1840 and 1900.

and 1900. Based on these records three sets of pricing data have been generated. The combined set includes over 260 price points, although as noted, this paper focuses on brick pricing during the decade of the 1880s:

1. **1841-1844 Wellington and Nelson.** This data set combines all records of digitised newspapers where brick pricing is featured in classified advertisements (October 1841 to March 1844).
2. **1844-1854 Various.** This data set combines annual samples from classified advertisements and market summaries taken from a variety of jurisdictions and digitised newspapers. It covers a 10-year transition period prior to the continuous

publication of market summaries in Auckland.

3. **1854-1900 Auckland.** This data set combines annual samples of Auckland brick prices from published market summaries (January 1854 to December 1900).

The dataset includes all priced advertisements for 1841 to 1843 Wellington and Nelson, but then only annual and supplementary samples of advertisements have been taken. The annual samples have been selected as close to the middle of the calendar year as is available. Prices are mainly advertised in pounds, but for analysis all have been converted to shillings (£1=20s). All brick prices given in this paper are based on the retail price per 1000

bricks. Where multiple market prices have been found, then the highest daily price has been recorded.

1841-1854: Early Settlement and the transition North

Brick pricing in the first years of settlement was relatively flat. Throughout 1841, the first year of which newspaper data is available, the price per 1000 bricks was unchanged at 60 shillings across 95 individual advertisements. With a shift in newspaper records from Wellington to Nelson, the advertised price dropped from 60 to 50 shillings. Improvements in manufacturing technology further decreased the Nelson price from 50 to 30 shillings where it remained with small change until 1844. From 1844 to 1854, the publication of brick prices shifted from the uniformity and regularity of the Wellington and Nelson newspapers to a period where pricing information was occasional, sporadic and sourced from a number of different newspapers in different locations. During this period, there was a transition from the Wellington and Nelson stable pricing to the more volatile market north in Auckland.

1854-1900: The Auckland Index

Based on prices reported in the *Daily Southern*

THE AUCKLAND MARKETS.

(Corrected to noon of Thursday).

BUILDING MATERIALS.

TIMBER.—Boards and Scantling, 100ft., best, 12s to 14s; second class, 7s 6d to 9s, best planed, tongued and grooved, 14s to 16s. Mills: Cargo, best, 10s to 11s second class, 6s to 7s. Bauk, 5s 6d to 6s 6d.
BRICKS (at Whau), 35s to 40s per 1000; Town Yards £2 5s to £2 10s. Drain pipes per 100 (6 inches bore). 30s; 4 inches, 14s; 3 inches, 9s; 2 inch, £2 5s per 1000; socket glazed pipes, 18 inches, 3s per foot; 15 inches, 2s 6d per foot; 12 inches, 2s per foot; 9 inches, 1s 3d per foot; 6 inches, 8d per foot; 4 inches, 6d per foot.
LIME, slacked, 1s per bushel; quick lime in store, 1s 6d to 2s.
 New Zealand Palings, 5ft., 7s 6d to 10s; 6ft., 13s; Ti-tree Rails, £2 10s to £3 10s per 100; Puriri Posts, £6 to £7; Shingles, 13s to 16s per 1,000; Hobart Town Palings, 5ft., 16s to 18s; 6ft., 18s to 20s; Hobart Town Rails, 72s 6d to 90s. Buying and selling quotations.

Figure 1: "The Auckland Markets" *New Zealand Herald* (1 January 1880) 4 (extract).

Cross, *New Zealand Herald* and then *Auckland Star*, this time series provides the longest elapsed single source of reporting on brick pricing in the nineteenth century. Commencing in October 1853, over the next 47 years it was variously titled "Auckland Produce Markets," "Auckland Commercial Markets" and "Auckland Markets." These provide an almost continuous set of brick pricing data through to the twentieth century. The inclusion of brick prices in the Auckland Market report commenced on the 18 October

BUILDING MATERIALS.				
Boards and Scantling, 100ft	..	0 13 0	—	0 13 6
Do., best dressed..	..	0 14 6	—	0 15 0
Do., second-class..	..	0 8 0	—	0 11 0
Rustic weatherboards, best	..	0 11 6	—	0 15 0
Mills, cargo, best	..	0 11 0	—	0 10 0
Plitches	..	0 11 0	—	0 0 0
Balk	0 6 0	—	0 8 6
Bricks, Whau	..	1 10 0	—	2 0 6
Do., town yards, 1000	..	2 0 0	—	2 5 0
Do., delivered	..	2 10 0	—	2 15 0
Hydraulic Lime, bushel	..	0 1 6	—	0 2 0
Shell Lime..	..	0 1 6	—	0 2 0
Craig's Stone do.,	..	0 1 6	—	0 1 9
Drain Pipes, 6in bores, 1000	..	15 0 0	—	0 0 0
Do., 4in	..	6 10 0	—	0 0 0
Do., 3in	..	4 10 0	—	0 0 0
Do., 2 1/2in	..	3 0 0	—	0 0 0
Do., 2in	..	2 10 0	—	0 0 0
English Slates, 1000	..	10 10 0	—	0 0 0
Socket Glazed Pipes, foot :				
24 inches	..	0 7 6	—	0 0 0
21 inches	..	0 6 0	—	0 0 0
18 inches	..	0 3 0	—	0 0 0
15 inches	..	0 2 6	—	0 0 0
12 inches	..	0 2 0	—	0 0 0
9 inches	..	0 1 6	—	0 0 0
6 inches	..	0 0 6	—	0 0 0
4 inches	..	0 0 4	—	0 0 0
3 inches	..	0 0 4	—	0 0 0

Figure 2: "Commercial" *New Zealand Herald* (6 June 1890) 4 (extract).

1853 at a market price of 60 shillings,¹⁹ although the previous week's report (the first in the series) did not include bricks.

Figure 1 gives an illustration, extracted from the *New Zealand Herald* of 1 January 1880, of the detail available in the market reports. Figure 2 provides an extract from the same

¹⁹ "Auckland Markets" (18 October 1853) p 2.

newspaper for 6 June 1890 – the columns provide price ranges in £ s d. Unfortunately, the range of products covered in each report was not consistent, but it is clear there remain further opportunities to develop nineteenth-century pricing series for other building materials based on the market reports.

With the exception of 1855, where private advertiser pricing was used to supplement the market reports, this series provides a continuous record from 1853 to 1900. At least one annual sample was taken from 1853 to 1900, giving 84 unique price points across the three publications. The price ranges from 60 shillings in 1853 to a high of 200 shillings in 1854, before returning to long period of flat pricing, as shown in Figure 3.

Two aspects of the volatility of brick prices shown in Figure 3 are worth noting. Firstly, the very high price of 200 shillings per 1000 bricks shown in October 1854. This was reportedly due to there being only being a single brick yard in Auckland.²⁰ By December 1854 Auckland pricing had retreated to 140 shillings, but it took a further five years for competition and increased supply to resolve

²⁰ "Auckland Markets" (24 October 1854) p 2.

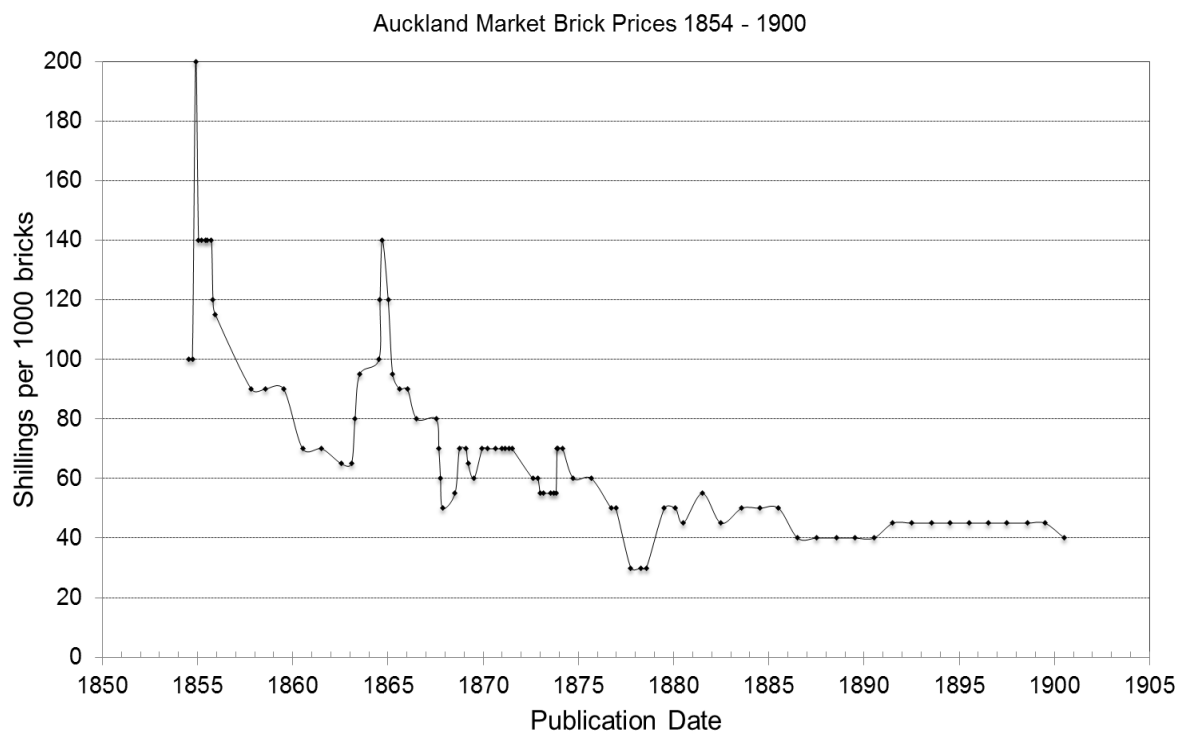


Figure 3: Auckland Brick Prices 1854-1900

the monopoly pricing of 1854. The lowest price of 30 shillings per 1000 bricks occurred in 1875 with the installation of a Hoffman Kiln in "Harker's Patent Steam Works" in Mechanics Bay and the promise of production of up to 80,000 bricks per week.²¹

²¹ "Brickmaking in Auckland" p 2.

Spotlight on the 1880s

As if in response to the pricing volatility of the earlier decades, from 1880 to 1890 there was a period of relative stability in brick prices. This pattern of stability cemented itself through the 1880s and continued to the end of the century. Throughout this period, Auckland brick pricing followed the generally downward trend of the Consumer Price Index as well as

wool and timber prices, as shown in Table 3.²² From 1880 to 1890, New Zealand's population grew 46%. Despite the increasing population pressure, brick pricing hovered around the 50 shillings mark for the first half of the decade before falling to 40 shillings per 1000 by 1890. This is most likely due to developments in machine-based production driving supply efficiencies from the mid-1860s. This is supported by the results of the manufactory census of 1896. Between 1891 and 1896, the number of workers employed in brick and tile manufacturing dropped from 494 to 455 (an 8% reduction) while the production value increased from £56,830 to £66,140 (a 16% increase)²³ and brick pricing fell by 20%.

Over the same period, the CPI fell by 14%, merino wool by 10% and timber by 7%. In the brick economy, as with other commodities, the 1880s marked a decade where the benefits of machinery production would overtake

²² Wool Price Index sourced from Lloyd Prichard *An Economic History of New Zealand to 1939*; Population Index sourced from "Historical population estimates tables"; CPI sourced from "Inflation Calculator"; Timber and brick pricing based on published Auckland pricing extracted for this paper.

²³ *New Zealand Yearbook 1903* p 272.

Date	Auckland Bricks	CPI	Merino Wood	Auckland Timber	NZ Population
June 1880	100			100	100
June 1880	90	100	100	79	
June 1881	110	100	105	93	117
June 1882	90	97	109	100	
June 1883	100	94	101	107	
June 1884	100	91	97	107	
June 1885	100	88	90	107	
June 1886	80	85	81	107	135
June 1887	80	82	81	93	
June 1888	80	79	85	86	
June 1889	80	84	101	93	
June 1890	80	86	90	93	146

Table 3: Price Index Comparison. 1880–1890

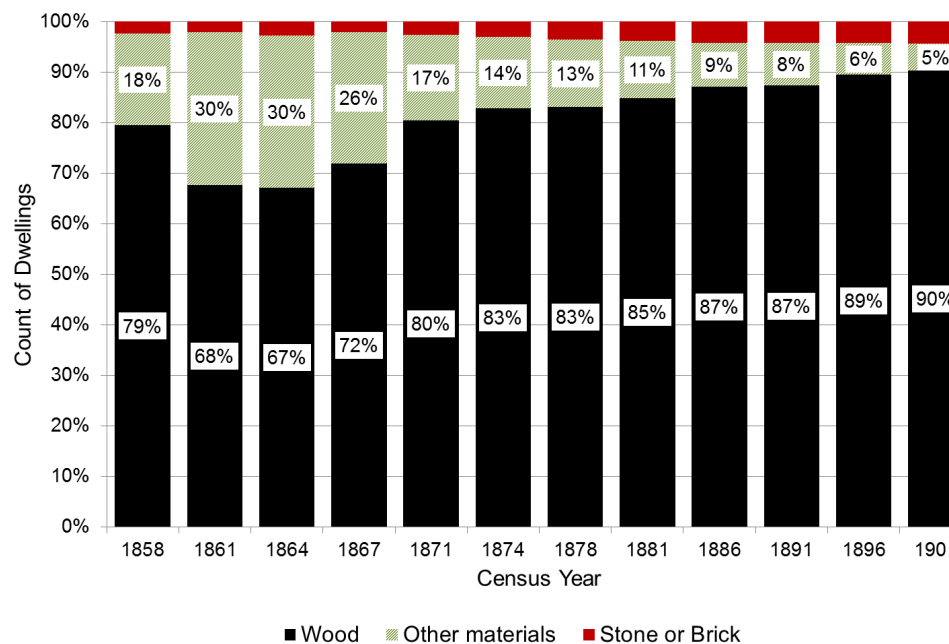


Figure 4: 1858-1901 Censuses: Reported Dwelling External Wall Type

population-based increases in demand to deliver a decline in prices.

Summary

Brick pricing throughout the first century of the new colony provides a mirror to the growth and development of early New Zealand. Pricing follows three key phases; steady state in early settlement, transition north (in both pricing and publication) and then Auckland dominance. Brick pricing also provides a case study of inequities in demand and supply. Early periods of price stability are followed by extreme price volatility as demand outstrips supply before machine-based production resolves supply shortages and price retreats. Over the decade of the 1880s, the price of bricks in Auckland fell 20% from 50 shillings per thousand to 40 shillings per thousand. Over the same period the CPI fell by 14%, the price of merino wool by 10% and timber by 7%.

This research has provided for the first time a time series of brick prices for nineteenth-century New Zealand. It provides base data for future exploration of construction types, styles and materials over the first 60 or so years of European settlement. It has also identified opportunities for future researchers

to develop nineteenth-century pricing series for other building materials based on the published newspaper market reports available through *Papers Past*.

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